

Minutes of 40th Meeting of the Academic Council

**held on 5th, 6th and 7th October 2021
through VLC**



**Directorate of Academics
Bahria University Islamabad**

Reference Designators & Terms used in this Document

These designators/terms are meant to introduce clarity, standardization and ease of reference while consulting or referring to this document.

Item Number **oonn**, where oo = ordinal sequence of the Academic Council Meeting.

nn = serial number of Item in that meeting.

Example: Item 2213 means item No 13 taken up by the 22nd ACM

Decision on New Item **Oonn**

Example: Decision 2213 means Decision on Item 2213.

Example: Decision 2213.b means Decision 2213, clause 'b'.

Example: Decision 2213.b.3 means Decision 2213, clause 'b', sub-clause '3'

Decision on Previous Item **o₂o₂(oonn)**

Example: Decision 22(1930) means Decision taken by the 22nd ACM on the previous/review Item 1930.

Example: Decision 22(1930).b means Decision 22(1930), clause 'b'.

Example: Decision 22(1930).b.3 means Decision 22(1930), clause 'b', sub-clause '3'.

Action Authority, Entity, Official, Person, Unit, Dept, Office, etc required to implement the decision

Responsibility The supra single Authority, Entity, Official, Person, etc required to:

- a. Coordinate the actions taken by the Authorities, Entities, Officials, Persons, Units, Depts, Offices, etc listed against "Action".
- b. Report to the Council the progress on the matter, through periodic progress reports and at the meeting of the Council.
- c. Be responsible to the Competent Authority, and the Council, for the case/issue overall /point/item he or she has been made responsible for.

Statutory Documents affected Most decisions of the Academic Council imply amendments to the relevant statutory documents. These amendments shall be processed and incorporated into the said documents forthwith and certainly before the next meeting of the Academic Council. The responsibility of processing the amendments and incorporating them into the statutory documents shall be as per the Registrar Notification 23/2015 dated 25th May 2015.

Deadlines Any time period deadlines shall count from the date of issue of the minutes. Time period in days shall imply working days.

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Acronyms & Abbreviations used in this Document

AACSB	Association to Advanced Collegiate School of Business
BBS	Bahria Business School
BSEAS	Bahria School of Engineering and Applied Sciences
BHSS	Bahria Humanities and Social Sciences School
BUHSC	Bahria University Health Sciences Campus
BUAR	Bahria University Academic Rules
BUIC	Bahria University Islamabad Campus
BUKC	Bahria University Karachi Campus
BULC	Bahria University Lahore Campus
BUMDC	Bahria University Medical & Dental College
BUCPT	Bahria University College of Physical Therapy
CE	Controller of Examinations
CH	Credit Hour(s)
CCH	Course Codes Handbook
CE	Computer Engineering
CS	Computer Sciences
CSE	Computer & Software Engineering
DA	Director Admissions
DAcad	Director Academics
DIC	Director Islamabad Campus
DIPP	Director IPP
DIT	Director Information Technology
DKC	Director Karachi Campus
DLC	Director Lahore Campus
EE	Electrical Engineering
EES	Earth & Environmental Sciences
EMBA	Executive Master of Business Administration
EP	Examination Policy
ES	Engineering Sciences
FHB	Faculty Handbook
FYP	Final Year Project
HS	Health Sciences
H&SS	Humanities & Social Sciences
IR	International Relations
MS	Management Sciences
NCEAC	National Computing Education Accreditation Council
NBEAC	National Business Education Accreditation Council
PMC	Pakistan Medical Commission
PNC	Pakistan Nursing Council
PNNC	Pakistan Navy Nursing College
PFM	Permanent Faculty Member
PEO	Programme Educational Objective(s)
PH	Public Health
PLO	Programme Learning Objective(s)
SE	Software Engineering
SHB	Students Handbook
SRD	Students Record Database
SCM	Supply Chain Management
T&N	Telecom & Networking

Attendance

BUHO

Present

1. Vice Admiral Kaleem Shaukat HI(M) (Retd)	Rector	In Chair
2. Rear Admiral Nasir Mahmood H(M) (Retd)	Pro-Rector (RIC)	Member
3. Rear Admiral Habib Ur Rehman HI(M) (Retd)	Pro-Rector (Acad)	Member
4. Surg Rear Adm Najm Us Saqib Khan HI(M), T.Bt (Retd)	Pro-Rector (HS)	Member
5. Cdre Shafqat Azad SI (M), S.Bt (Retd)	Registrar	Member
6. Dr. Habib Ur Rehman	Advisor (Islamic Studies)	Member
7. Dr. Atif Raza Jafri	Dean (ES)	Member
8. Dr. Ali Imtiaz	Dean (MS)	Member
9. Dr. Adam Saud	Dean (H & SS)	Member
10. Cdre Asim Raza SI(M) (Retd)	Dir Academics	Member & Secy
11. Cdre M Masud Akram SI(M), S.Bt	Dir Admissions	Member
12. Cdre Nasrullah SI(M) (Retd)	Controller of Exams	Member
13. Cdre Zahid Hasan Bawar SI(M)	Dir R&D/ ORIC	Member
14. Brig Asif Ali Asif (Retd)	Dir Health Sciences	Member
15. Dr. Riaz Ahmed	Dir PGP	Member
16. Dr. Sobia Shujjat	Dir LDC	Member
17. Mr. Fazal Wahab	Dir DQA	Member

In Attendance

18. Cdre Muhammad Aslam Khan SI(M) (Retd)	Treasurer
19. Cdre Zahid Akram SI(M), S.Bt (Retd)	Director HR
20. Ms. Sundal Mufti	Dir Student Affairs
21. Mr. Rizwan Aamir	Dir IT
22. Dr. M Awais Mehmood	Dir IO
23. Captain Azhar Iqbal PN (Retd)	Dy. Registrar (Academics)
24. Cdr Dr. Mahmood Ahmed Shaikh PN (Retd)	Dy. Registrar (Regulations)

BUIC

Present

25. Rear Admiral Naveed Ahmad Rizvi HI(M) (Retd)	DG	Member
26. Dr. Muahmmad Ali Saeed	Principal BBS-IC	Member
27. Dr. Awais Majeed	HoD (SE) BSEAS-IC	Member
28. Dr. Shahzad Hassan	HoD (CE) BSEAS-IC	Member
29. Dr. Samreen Fahim Babur	HoD (MS) BBS-IC	Member
30. Dr. Khalil Ullah Muahmmad	HoD (BS) BBS-IC	Member
31. Dr. Farrukh Shahzad	HoD(Media Studies)BH3S-IC	Member
32. Dr. Muhammad Umar Hayat	HoD (HSS) BH3S-IC	Member
33. Dr. Rizwana Amin	HoD (PP) BH3S-IC	Member
34. Dr. Syed Muhammad Shahid Tirmazi	HoD (IS) BH3S-IC	Member

In Attendance

35. Cdr Muhammad Pervez PN (Retd)	Deputy Director (Academics)
36. Mr. Muhammad Fayyaz	Rep of Law Department
37. Lt Cdr Beenish Arooj PN	Admin Officer PNFS-Ibd Member

BUKC**Present**

38. Vice Adm Khawaja Ghazanfar Hussain HI(M) (Retd)	DG	Member
39. Captain Zaheer Ahmed PN (Retd)	Director	Member
40. Dr. Sayma Zia	Principal BBS-KC	Member
41. Dr. Sohaib Ahmed	Principal BSEAS-KC	Member
42. Dr. Oyoon A Razzaq	Principal BH3S-KC	Member
43. Dr. Mustaghis-Ur-Rehman	Associate Dean (MS)	Member
44. Dr. Salma Hamza	HoD (E&ES) BSEAS-KC	Member
45. Engr. Dr. Syed Safdar Ali	HoD (CS) BSEAS-KC	Member
46. Dr. Naveed R Khan	HoD (MS) BBS-KC	Member
47. Dr. Asif Inam	HoD (Maritime Sciences)	Member
48. Dr. Talat Sharafat Rehmani	HoD (H&SS) BH3S-KC	Member
49. Dr. Abdul Qadir	HoD (IS) BH3S-KC	Member
50. Senior Lecturer Mah-e-Darakhsan	HoD (Media Studies)BH3S-KC	Member

In Attendance

51. Mr. Waqar Uddin	DD (Academics)
52. Syed Sama Yazdani	Senior Assistant Professor(SE)
53. Ms. Erum Shafiq	AD (QA)

BULC**Present**

54. Cdre Shahid Azmat Wain SI(M) (Retd)	Director	Member
55. Dr. Adnan Hushmat	HoD (MS)	Member
56. Dr. Khawaja Qasim Maqbool	HoD (CS&IT)	Member
57. Dr. Urooj Sadiq	HoD (PP)	Member

In Attendance

58. Cdr Zahid Saeed PN (Retd)	Project Officer
59. Mr. Muhammad Umair Saeed	Manager QA

BUHSC**Present**

60. Vice Admiral Khalid Amin HI(M) (Retd)	DG	Member
61. Cdre Muhammad Irfan SI(M) (Retd)	Director	Member
62. Dr. Ambreen Usmani	Dean HS/ Principal	Member
63. Dr. Kulsoom Fatima	Vice Principal	Member
64. Dr. Khalid Aziz	Vice Principal (DPT)	Member
65. Cdr Mariam Bahram PN	Principal NC	Member
66. Dr. Shakeel Ahmed	HoD(Paediatrics)	Member
67. Dr. Naheed Sultan	HoD (Surgery)	Member
68. Dr. Nasim Karim	HoD (Pharmacology)	Member
69. Dr. Iqbal Hussain Updipurwala	HoD (ENT)	Member
70. Prof. Khalida Nasreen Abdullah T(M)	HoD (Obst and Gynae)	Member
71. Dr. Nighat Rukhsana	HoD (Physiology)	Member
72. Dr. Hasan Ali	HoD (Biochemistry)	Member
73. Dr. Mahreen Lateef	HoD MLT (MDRL)	Member
74. Dr. Jasmene Taj	HoD (Pathology)	Member
75. Dr. Sameer Shahid Ameen	HoD (Eye)	Member
76. Dr. M Sajid Abbas Jaffri	HoD (Medicine)	Member

IPP**Present**

77. Dr. Zainab Hussain Bhutto	Dean PP/ Principal	Member
78. Dr. Kiran Bashir Ahmed	HOD (IPP)	Member

Proceedings

Preliminaries

Commencement of the Meeting, Opening Remarks of the Chair and Meeting Schedule

1. With the quorum complete, the proceedings commenced at 10:55 hrs with recitation from the Holy Quran. The meeting was held till 16:30 on 5 October 2021 with lunch & prayer break between 13:00 - 14:00; was continued on the 6 October 2021 from 10:45 till 17:00 with lunch & prayer break between 13:00 - 14:00; and was concluded on 7 October 2021 with the session held between 10:45 to 14:00.
2. The Chair welcomed the participants on the first day and highlighted the challenges faced during the Spring and Summer 2021 semesters due Covid-19 related restrictions. He shared expectation that the CUs had made preparations for the Fall semester commencing in the second week of October 2021, and advised all to follow the SOPs. He wished all the CUS best; looking forward to a successful start by the H-11 Campus where major development works are being completed, and wish those involved in it high success. He indicated the forthcoming PEC's Zero Visit of BSEAS-IC at the new Campus and conveyed expectation that related preparations would be made earnestly, as the visit report would decide the future academic activities to be taken in that Campus.

Confirmation of the Minutes of Special (37th &39th) and Regular (38th) ACMs

3. It was apprised to the Council that:
 - a. The **37th** (Special) ACM was held at BUHO on 24 February 2021 to seek approval of the Council on the Single Point agenda regarding Revised Roadmaps by all the Faculties of BU, in compliance of the New HEC Undergraduate Education Policy (UEP) 2020, prior formal implementation. After the meeting, draft MoMs were communicated to all members and non-member participants, for comments, on 14 April 2021. Comments received from all concerned were incorporated, followed by processing the draft minutes on file for approval of the honorable Rector, and approved Minutes were disseminated to all concerned on 28 May 2021 through email.
 - b. Subsequently, **38th** ACM was held at BUHO on 5 April 2021 (1-day only) as scheduled previously. After the meeting, draft MOMs were communicated to all members and non-member participants, for comments, on 16 April 2021. Comments received from all concerned were incorporated, followed by processing the draft minutes on file for approval of the honorable Rector and approved Minutes were disseminated to all concerned for implementation on 05 May 2021 through email.
 - c. Later, another Special/ **39th** ACM was held at BUHO on 7 June 2021 to seek approval of the Council on certain urgent nature items which could not be discussed during **38th** ACM due paucity of time. After the ACM, draft MoMs were communicated to all members and non-member participants, for comments, on 17 June 2021. Comments received from all concerned were incorporated, the draft minutes processed on file for approval of the honorable Rector and approved Minutes were disseminated to all concerned for implementation on 06 July 2021 through OAS.

Amendment

4. Meanwhile, Examinations Dte asked for revision/ amendment of some course titles approved vide **Appendage 3803** of 38th ACM MoM, for conformity with standard nomenclature as tabled below; indicated amendments subsequently supported by Dean HS as well:

S No.	For (Course Title)	Read (Course Title)	Remarks
i.	Journal Club (Essential)-1	Journal Club – I	Semester-1
ii.	Teaching Internship (Essential)-1	Teaching Internship - I	
iii.	Special Pathology	Special Pathology*	Semester-2
iv.	Microbiology & Mycology	Microbiology & Mycology**	
v.	Journal Club (Essential)-2	Journal Club – II	
vi.	Teaching Internship (Essential)-2	Teaching Internship - II	
vii.	Journal Club (Essential)-3	Journal Club – III	Semester-3
viii.	Teaching Internship (Essential)-3	Teaching Internship - III	

* for Histopathology sub-specialisation

** for Microbiology sub-specialisation

5. To incorporate the above mentioned amendment, following was recommended to be recorded and **Decision 3803** of the Minutes of 38th ACM replaced as under:

“The Council approved **PAT 750 Special Pathology** and **PAT 751 Microbiology & Mycology** in the Roadmap of MPhil Pathology at BUMDC wef Fall 2021 Semester as per details at **Revised Appendage 3803** (page 55). Point dropped”.

Decisions

6. Proposed amendment was agreed by the Council. Detail is as under:

“The Council approved **PAT 750 Special Pathology** and **PAT 751 Microbiology & Mycology** in the Roadmap of MPhil Pathology at BUMDC wef Fall 2021 Semester as per details at **Revised Appendage 3803** (page 55). Point dropped”.

7. Minutes of 37th, 38th and 39th ACM were tabled for confirmation including the amendment mentioned in para 4 above. The same were approved with amendment and confirmed by the Council.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean HS, CE, DAcad, DA, DIT	-
Statutory Documents Affected:	Updating of CCH, Prospectus, SHB, BU Website and amendment of Minutes of 38 th ACM.	

Review Items**Item 2432: MS Supply Chain Management at BUKC – Progress Report**

Responsibility: Dean MS

Decision of the 38th ACM

8. The Council emphasized that efforts to hire requisite FMs may be made and the point may continue to be kept on ACM Agenda and progress be reported.

Progress Reported

9. Directorate of HR & Principal BBS-KC are still in the process of finding relevant faculty; PhD in Supply Chain Management.

Discussion

10. Dean MS intimated that plans were afoot to hire the required faculty with assistance of PNSL. Principal BBS-KC conveyed that required faculty would be available from another institute that is likely to be closed. Dir Acad indicated that the agenda item was originally raised for launch of MS (SCM) at BUIC, which was started after HEC NOC in September 2015. For BUIC, HEC was approached for NOC in November 2015, but the same was pending for want of faculty (2 x PhD qualified in SCM). He proposed to drop the item and raise it afresh when BBS-KC gets the required faculty. DQA supported the suggestion and apprised that the programme could not be commenced till 2 x PhD in SCM were hired by BUKC. After further discussion, the Chair concurred with the proposal.

Decision 40(2432)

11. Point Dropped due persistent non-availability of required faculty members; to be raised afresh for launch of new programme at BBS-KC when required faculty is available.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principal BBS-KC	Dean MS
Statutory Documents Affected:	Nil	

Item 3321: Approval of 4.5 Years as minimum duration of the Bachelor of Science in Supply Chain Management Program being conducted by the PNSL

Responsibility: Dean MS

Decision of the 38th ACM

12. The Council decided that Dean MS is to process the methodology for record of PNSL Re-examinations results through a case file and the Registrar office is to pursue finalization of MOU with PNA. The point is to remain on ACM agenda and progress be reported.

Progress Reported

13. Methodology for record of re-examinations results was discussed between Dean MS and PNSL, with consent to review the process. Observations on subsequent PNSL proposal have been conveyed; to be followed by a meeting between all stake holders in Oct 2021 to finalise the methodology along with required documentation.

14. With regard to the progress related to pursuance of finalization of MoU between Bahria University and Pakistan Naval Academy was sent to NHQ by the Registrar office in August 2020 (BU letter RBU/354/465 dated 12 Aug 20), which is still under process as conveyed by NHQ in Sep 2021 (NHQ letter ED/6409/G/VII/992 dated 1 Sep 21).

Discussion

15. Dean MS apprised that methodology for recording the re-examinations of PNSL students in the final transcript would be finalized in the coordination meeting planned in October 2021. Trg Cdr PNSL briefed the Council on the progress of MoU between BU and PNA, which comprised of PNA proposal to have it signed between the NHQ and BU. He also conveyed the NHQ query on the need of MOU when no such mechanism existed with NUST for the programmes of that HEI at PNA. Dir Acad explained the background of the need of proposed MOU, to cover the conduct of a part of BU academic programme at another HEI. He indicated that the proposed MOU was to be signed by the Registrars of two HEIs; the PNA itself being a degree awarding institute. He further explained that the NUST programmes were based on relative grading for which FBOS were held at PNEC to finalise the result of each semester at PNA. As the BU results were based on absolute grading, FBOS meetings were not required to finalise the PNA results. DQA elaborated that proposed MOU or a similar mechanism was essential to avoid observation of a regulatory body on the BS (SCM) programme conducted at PNSL. The Registrar proposed to follow the PNEC model adopted between NUST and PNA. The Chair concurred with the proposal. After further discussion, it was agreed that PNSL should have a formal arrangement with PNA for conduct of first 3 x semesters of BS (SCM) programme at that institute, while the audit of PNSL by the DQA would include the PNA for related programme.

Decision 40(3321)

16. The following was decided:

- a. Methodology for recording the re-examinations of PNSL students in the final transcript is to be finalized by Dean MS and CO PNSL, in consultation with CE, and progress to be reported in the next ACM.
- b. PNSL is to pursue a formal mechanism with PNA for conduct of first 3 x semesters of its BS (SCM) programme, in consultation with DQA and progress is to be reported in the next ACM.
- c. Decision on pursuance of MOU between BU and PNA or otherwise would be taken after finalising the monitoring mechanism between the PNSL and PNA.
- d. DQA will include PNA in its audit of BS (SCM) programme at PNSL.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean MS, CE, CO PNSL – Decision 16. a.	Dean MS
	CO PNSL, DQA – Decision 16. b.	
	DQA – Decision 16. c.	
Statutory Documents Affected:		Nil

Item 3509: Launch of MPhil (Biochemistry) and MPhil (Physiology) – Progress Report

Responsibility: DG BUMDC

Decision of the 38th ACM

17. The Council agreed to the requirement of release/ re-appropriation of payment of Rs 0.1 Million as requested by BUMDC subject to fulfilment of necessary procurement process and fund allocation channels. Point is to remain on agenda and progress be reported.

Progress Reported

18. The progress of points covered in the Item is as under:

a. **MPhil Biochemistry & Physiology Programs**

- (1) NOC received from HEC. Both programs will start in Fall 2021 Semester.

- (2) Total registered applicants for 05 MPhil programs are 58 while 44 have paid the processing fee.
- (3) Break up of applicants:
 - (a) Anatomy- registered 12, fee paid 09.
 - (b) Pathology- registered 13, fee paid 10.
 - (c) Pharmacology-registered 13, fee paid 09.
 - (d) Physiology-registered 10, fee paid 09.
 - (e) Biochemistry-registered 10, fee paid 07.

b. BUMDC Library PG-Section Upgradation

- (1) Total 100 book titles are required as per HEC for each program.
- (2) Out of 59 books approved as special case (required to achieve a figure of 50% books in 03 subjects of Anatomy, Pharmacology and Pathology), 56 have been procured while remaining 03 are unavailable.
- (3) Approval for remaining 50% books in 03 subjects to be granted in first quarter of FY 2021-2022. Quotations are under process.
- (4) Approval to be granted for 80 book titles for Biochemistry & Physiology programs. Quotations are under process.

c. Animal House Progress

- (1) Animal house staff- 02 attendants and 01 supervisor have joined.
- (2) Point recommended to be dropped.

Discussion

19. DG BUHSC apprised that the final number of applicants joining the MPhil programmes has not been very high. The Chair conveyed satisfaction over the efforts made by BUMDC to increase the MPhil intake. He showed concern over the slow progress on provision of required books in the library. DG BUHSC attributed it to the lengthy process for purchasing the books through the Chief Librarian, and proposed to decentralise the same. The Registrar suggested to take a decision in this regard after due deliberation at BUHO level. Dean HS indicated that the Animal House inauguration by the honourable Rector had been undertaken on 21 September 2021, and proposed to drop the item from ACM.

Decision 40(3509)

20. Point Dropped considering the satisfactory progress, while the decision to decentralize the purchasing of library books is to be undertaken separately after processing by the Registrar office through case file.

Action Required	Action by	Responsibility of
Implementation of the Decision	Registrar	Registrar
Statutory Documents Affected:	Nil	

Item 3516: Introduction of New Bachelor of Science Program in Geosciences (with Specializations: Marine Geology, Marine Geophysics; GIS & Remote Sensing)
Responsibility: DG BUKC

Decision of the 38th ACM

21. Finally, the Council resolved the following:
- a. BS (Geosciences) is to be continued in Fall 2021 and intake response evaluated prior adoption of any alternate programme.
 - b. Pro-Rector (RIC) is to Chair a committee with Director BUKC, Dean MS, HoD (Maritime Sciences) BUKC as Members along with co-opted member (as required) to prepare a plan

regarding roadmap of School of Maritime and Applied Sciences, while clubbing it with Agenda Item 3301.

c. Point may be kept on agenda and progress be reported.

Progress Reported

22. Admission for BS (Geosciences) in Fall 2021 semester is in progress.

23. Committee constituted vide Registrar Office Order 12/2021 dated 24 May 2021 for conversion of the Department of Maritime Sciences to the School of Maritime & Applied Sciences has drafted a proposal, which is being technically vetted for submission to the Competent Authority.

Discussion

24. HOD (E&ES) BSEAS-KC reported that response to fresh admissions into BS (Geosciences) programme has again been very low for Fall 2021 semester; only one applicant depositing the admission fee to date. DG BUKC intimated that, out of 38 programmes offered in Fall 2021 semester, response for 17 programmes is very low; requiring review to continue or return the admission fee of these programmes. Pro-Rector (RIC) apprised the Council that a worldwide trend existed in decline of interest in traditional programmes in the realm of E&ES, and many universities were tackling this through new programmes of hybrid nature. Dean ES shared concerns over adopting new programme titles vis-à-vis HEC acceptance, related job market, etc. He also proposed to merge the E&ES into the maritime Sciences to form the Maritime & Applied Sciences Departments. It was also noted that some HEIs still have good intake in E&ES programmes due lesser fee structure. Dir Admissions proposed to offer scholarships instead of reduced fee. The Chair indicated that E&ES was an important field with high potential for applicability in Balochistan region. He asked BUKC to undertake a study to offer alternate programmes in this domain, similar to the Environmental Engineering and GIS & Remote Sensing programmes being offered by some other HEIs, along with market oriented approach, i.e. interaction with OGDCL.

25. Regarding the proposal to convert the Department of Maritime Sciences into the School of Maritime & Applied Sciences, suitable Roadmaps are being prepared by the Committee. Details of these will be covered in Agenda Item 3910.

Decision 40(3516)

26. The Council decided the following:

a. BUKC is to undertake a study to replace the currently offered programmes of E&ES with alternate programmes covering the contemporary field requirements along with interaction with related job market (i.e. OGDCL). The study is to be submitted for consideration and progress to be reported in next ACM.

b. Progress on the Committee's proposal to convert the Department of Maritime Sciences, BSEAS-KC into the School of Maritime & Applied Sciences is to be covered against the Agenda Item 3910, while dropping it from this agenda item. Point dropped from this agenda item.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principal BSEAS-KC	DG BUKC
Statutory Documents Affected:	Nil	

Item 3601: Implementation of BU Guidelines on Inclusion of Maritime Subjects in other Programmes

Responsibility: Dean H&SS

Decision of the 38th ACM

27. The Council resolved that Dean H&SS is to propose suitable course(s) for inclusion as Maritime subjects in respective domains. The point may be kept on agenda and progress be reported.

Progress Reported

28. Following courses have been recommended by Dean H & SS for inclusion in respective Programs:

S No.	Course Codes	Course Title	Programs
a.	MTM 673	Blue Economy of Pakistan	
b.	MTM 674	Geopolitics & Maritime Security in Indian Ocean	BSS in IR
c.	MTM 340	Maritime Culture and Tourism	BSS in Anthropology
d.	MTM 331	Maritime Anthropology	BSS in Anthropology
e.	MTM 672	Maritime Governance and Sustainability through Blue Economy	BSS in Development Studies
f.	ISS 521	Islam and Maritime	MS Islamic Studies

29. Details/ outlines of above mentioned courses are attached as per **Appendage 40(3601)** (page 58) for approval of the Academic Council.

Discussion

30. Proposed courses complete the requirement of including maritime related courses in H&SS programmes, while the same have already been incorporated by the Faculties of ES, MS and PP. The courses were approved as proposed, while amending the title of **ISS 521** as **Maritime History of Muslims**.

Decision 40(3601)

31. Maritime related courses proposed by Dean H&SS are approved for adoption, with amendment of one title (*Islam and Maritime* replaced with *Maritime History of Muslims*) and finalized course codes/ course titles as listed at **Appendage 40(3601)** (page 58). Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean H&SS – Updating of Roadmap on CMS	Dean H&SS
	CE – Updating of SRD and CCH	
	DA – Updating of BU Prospectus	
	DIT – Updating of BU Website	
Statutory Documents Affected:	Nil	

Item 3610: Inclusion of Non-Medical (MSc) Candidates in MPhil Programs at BUMDC to increase Student Intake

Responsibility: DG BUMDC

Decision of the 38th ACM

32. BUMDC is to pursue subject item as the change of eligibility criteria for related MPhil programmes; comprising of the details of eligible qualifications, weightage, etc. The point is to be kept on agenda and progress be reported.

Progress Reported

33. Non-medical candidates were included in the eligibility criteria for admissions in MPhil programs of Biochemistry & Physiology. HEC-NOC has been received for both programs, which indicates permission is granted by HEC to follow the amended eligibility criteria. Both MSc and BS (4-years program) will henceforth be inducted along with MBBS and BDS candidates in MPhil programs of Biochemistry and Physiology; starting from Fall 2021 semester.

Discussion

34. Amended eligibility criteria for MPhil programmes at BUHSC is to be henceforth followed accordingly.

Decision 40(3610)

35. Point dropped due satisfactory progress.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principal BUMC, Principal BUDC	Dean HS
Statutory Documents Affected:	Nil	

Item 3620: Pakistan Navy Finishing School (PNFS) Syllabus and List of Faculty Members

Responsibility: Dean H&SS

Decision of the 38th ACM

36. The Council decided that the diploma courses may be presented for formal ACM approval by the PNFS whereas short courses be conducted at Schools level as required. Point is to remain on agenda and progress be reported.

Progress Reported

37. Two diploma courses, titled ***Advance Cooking & Baking Methods*** and ***Fashion, Clothing & Apparels*** have been approved by honorable Rector on related OAS case file (BU-HO/Dean H&SS/2021/007). Information has been conveyed to Director Academics, Controller of Examinations and Director LDC.

Discussion

38. Principal PNFS presented the curricula of courses with revised titles, ***Culinary Arts and Hospitality*** and ***Grooming and Fashion Designing***; detailed given at **Appendage 40(3620)**. After brief discussion, the Council ratified the courses for PNFS as presented.

Decision 40(3620)

39. The Council ratified PNFS Diploma courses ***Culinary Arts and Hospitality*** and ***Grooming and Fashion Designing*** with the curricula and other details as given at **Appendage 40(3620)** (page 78). Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principals PNFS	Dean H&SS
Statutory Documents Affected:	Nil	

Item 3628: Launch of New Program – Bachelor of Science in Artificial Intelligence (AI)

Responsibility: Dean ES

Decision of the 38th ACM

40. NCEAC zero visit is to be pursued for launch of BS (AI) in Fall 2021 at BUIC and BUKC, along with required infrastructure. Point is to remain on agenda and progress be reported.

Progress Reported

41. New program *BS in Artificial Intelligence* is being launched at BSEAS-IC and KC from Fall 2021 semester after successful Zero Visit by NCEAC on 8 July 2021. Intake target of 50 students each is likely to be achieved through the CS Dept.

Discussion

42. Keeping in view the desired progress attained on the item, the point may be dropped.

Decision 40(3628)

43. Point dropped due satisfactory progress.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principals BSEAS-IC & KC	Dean ES
Statutory Documents Affected:	Nil	

Item 3645: Launch of New Program – Bachelor of Social Sciences in International Relations and Development Studies

Responsibility: Dean H&SS

Decision of the 38th ACM

44. The house decided that the point may be kept on agenda and progress be reported in next ACM.

Progress Reported

45. Program has been announced by the H&SS Department of BH3S-KC, and admissions are under progress for Fall 2021 semester.

Discussion

46. Keeping in view the desired progress attained on the item, the point may be dropped.

Decision 40(3645)

47. Point dropped due satisfactory progress.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principal BH3S-KC	Dean H&SS
Statutory Documents Affected:	Nil	

Item 3652: Approval of Case Writing Centres in Bahria Business School Islamabad and Karachi

Responsibility: Dean MS

Decision of the 38th ACM

48. Modalities/ working of Case Writing Centres are to be worked out, while the point is to remain on agenda and progress be reported.

Progress Reported

49. Setting up of Case Writing Centres (CWCs) was approved in 36th ACM held on 1-3 Dec 20, followed by initiation of CWC at Islamabad in Spring 2021 and Karachi in Fall 2021. Dr Safa Riaz is assigned as Manager CWC at BBS-IC while Dr Imran Nazir is nominated a Manager CWC at BBS-KC.

50. Case file was moved with proposed ToRs and progress report for the course load waiver of Manager CWC, which was not approved by the Competent Authority. The Principals and HoDs have been informed to continue the CWC with appointed faculty as Manager CWC without course load waiver.

51. Principal BBS-IC will present the modalities/ working of Case Writing Centres, for consideration by the Academic Council.

Discussion

52. Dean MS apprised that a proposal for Research and Business Solution Center (RBSC) has been presented by BBS-KC during the Rector's last visit, which included the CWC. A combined proposal from BBS-IC and BBS-KC and BBSI may be drafted jointly by both the Principals for formal presentation to the honourable Rector – covering the working of CWC. The proposal would also include related NBEAC requirements. After further discussion, the Chair asked Dean MS to expedite the proposal as explained.

Decision 40(3652)

53. Dean MS is to expedite the RBSC proposal through Principals BBS-IC and BBS-KC. Progress is to be reported in the next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principal BBS-IC, Principal BBS-KC	Dean MS
Statutory Documents Affected:	Nil	

Item 3654: Launch of New Program – Master of Science in Iqbal Studies and Inclusion of One Optional/Pre-requisite BS Level Course 'Iqbal and His Message'

Responsibility: Dean H&SS

Decision of the 38th ACM

54. The Council ratified revised Roadmap of MS program and one optional BS level course as per Appendix 38(3654). Point is to remain on agenda and progress be reported.

Progress Reported

55. During a meeting chaired by the honorable Rector, detailed discussion was held on the agenda and it was decided by the Competent Authority to postpone the launch of this program till the success of MS in Islamic Studies. No progress has been done afterwards.

Discussion

56. Dean H&SS apprised that *MS in Islamic Studies* had been launched with target intake of 15 students in each CU (BUIC/ BUKC), while the intake is just short of target. After further discussion, it was agreed to pend the *MS in Iqbal Studies* till Fall 2022, as the applicants for both the programmes are likely to be of the same area of interest.

Decision 40(3654)

57. Launch of new programme *MS in Iqbal Studies* is to be pended till Fall 2022, and brought afresh for ACM approval when the intake of *MS in Islamic Studies* is healthy. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principal BH3S-IC	Dean H&SS
Statutory Documents Affected:		Nil

Item 3655: Launch of New Program – Master of Science in Islamic Studies (Islam and Life)

Responsibility: Dean H&SS

Decision of the 38th ACM

58. The house agreed to launch the program for both BUIC and BUKC. Case for seeking NOC for BUKC is to be forwarded to HEC.

Progress Reported

59. Program has been announced by Islamic Studies department of BUIC & BUKC after HEC approval and admissions are under progress for Fall 2021 semester. Degree and Transcript title will be as per HEC NOC "***Master of Science in Islamic Studies***".

Discussion

60. Keeping in view the successful launch of the programme, the point may be dropped.

Decision 40(3655)

61. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	CE – Transcript title as per HEC NOC Registrar – Degree title as per HEC NOC	Dean H&SS
Statutory Documents Affected:		Nil

Item 3657: Launch of New Program – Master of Science in Applied Anthropology

Responsibility: Dean H&SS

Decision of the 38th ACM

62. The point is to be kept on ACM agenda and progress be reported.

Progress Reported

64. Program has been announced at H&SS Department of BH3S-IC after HEC approval and admissions are under progress for Fall 2021 semester. Degree and Transcript title will be as per HEC NOC, "***Master of Science in Anthropology***".

Discussion

65. Keeping in view the successful launch of the programme, the point may be dropped.

Decision 40(3657)

66. Point dropped due satisfactory progress.

Action Required	Action by	Responsibility of
Implementation of the Decision	CE – Transcript title as per HEC NOC Registrar – Degree title as per HEC NOC	Dean H&SS
Statutory Documents affected:	Nil	

Item 3804: Maximum Number of Chances for Appearing in MBBS/BDS Examination

Responsibility: Dean HS

Decision of 38th ACM

67. The Academic Council decided the following:

- a. Status quo be maintained for the time being with 04 x attempts (as approved by Rector on file).
- b. Clarity be achieved regarding applicability of 04 x attempts in 1st and 2nd year professional examinations of MBBS/ BDS programs.
- c. Moreover, clarity regarding sharing of information of failed students with other HEIs be also obtained from respective Statutory Bodies.
- d. After clarifications the case may be processed on file.
- e. Point may be kept on agenda and progress be reported.

Progress Reported

68. The case has been moved on file for further deliberation. Final decision is awaited.

Discussion

69. The case file covering the maximum chances for appearing in MBBS/ BDS exams along with other PMC Rules is under process of approval by the competent authority. The Chair directed to present the proposals contained therein for suitable decision prior the next ACM.

Decision 40(3804)

70. Proposals for the maximum chances for appearing in MBBS/ BDS exams other PMC Rules are to be presented to the honourable Rector for suitable decision. Progress is to be reported in the next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	DHS	Pro-Rector (HS)
Statutory Documents Affected:	Nil	

Item 3906: Addition of New Course “Ideologies and International Relations” as Elective PhD Course

Responsibility: Dean H&SS

Decision of 39th (Special) ACM

71. The Council directed to review the course outline as well as outcome/ objectives in consultation with *Advisor to the Rector on Islamic Studies* for inclusion of non-western/ Muslim ideologies influencing history and international relations, for approval in the next ACM.

Point is to remain on agenda and progress be reported.

Progress Reported

72. Course outline is still under review by the Department.

Discussion

73. HoD (H&SS) BH3S-IC briefed the Council that course outline was being refined as directed in the last ACM. In this regard, guidance has been taken from the Advisor to the Rector for Islamic Studies, while a meeting was being arranged with International Islamic University on his advise. He further apprised that most of the books pertaining to the course title were of western origin. However, efforts were in hand to include the maximum possible non-western/ Muslim origin references too. He assured that the course outline will be shortly reviewed as directed by the ACM.

Decision 40(3906)

74. Course outline of the new proposed course Ideologies and International Relations is to be reviewed as directed in early timeframe. Progress is to be reported in next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	HoD (H&SS) BH3S-IC	Dean H&SS
Statutory Documents Affected:		Nil

Item 3907: Uniform Credits Hours for “Pakistan Studies (Compulsory)” and “Islamic Studies” at BU as per New HEC Policy (Clubbed agenda from HSS and Islamic Studies Department)

Responsibility: Dean H&SS

Decision of 39th (Special) ACM

75. The Council approved adoption of *Pakistan Studies* and *Islamic Studies* courses in standardised format with 3 x CH each in all Programmes of BU with effect from Fall 2021 Semester intake, while discontinuing the 2 x CH courses with these titles, amending the Roadmaps comprising of such courses (2 x CH each) through case file followed by ratification in next ACM, and cater the failures of 2 x CH courses in Spring 2021 or previous semesters by offering the Repeat course in upcoming Summer 2021 Semester. The Council further directed to improve the course outline of *Pakistan Studies* and *Islamic Studies* with 3 x CH each for better outcome and learning objectives.

76. Point is to remain on agenda and progress be reported.

Progress Reported

77. The Faculties of H&SS, PP, HS and ES (E&ES only) processed respective cases for adoption of revised course outlines. However, considering the HEC postponement of UEP 2020 till Fall 2022 and formulation of committees of VCs/ Rectors to review that Policy, it was decided by the Competent Authority to pend the review of related Roadmaps of BU academic programmes as well, till the time further guidelines are received from the HEC.

Discussion

78. Dir Acad apprised the Council that standardization of common courses was an active agenda item of Deans' Committee Meeting, and adoption of revised outline of the courses *Pakistan Studies* and *Islamic Studies* would be pursued at that forum. After further discussion, the Chair directed to drop the point from the ACM and bring it afresh, if required, after the Undergraduate Education Policy 2020 has been reviewed by the HEC.

Decision 40(3907)

79. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	HoD (H&SS) BH3S-IC	Dean H&SS
Statutory Documents Affected:	Nil	

Item 3908: Launch of New Program - Master of Science in Clinical Psychology at BULC

Responsibility: Director BULC

Decision of 39th (Special) ACM

80. After due deliberation, the Academic Council decided the following:

- a. Launch of ***Master of Science in Clinical Psychology*** at BULC with effect from Fall 2021 Semester was approved along with Roadmap at Appendage 3908; subject to issuance of NOC by the HEC. Accordingly, the Programme is to be advertised for first intake.
- b. Roadmap approved for MS (Clinical Psychology) at BULC shall contain the course **Research Methods (PPY 702)**, while the Roadmaps for MS in Clinical Psychology at IPP and BULC are to be simultaneously amended for conformance of 28th ACM Decision 2812 by amending the Appendage 2812 in MoMs of 28th ACM.

Progress Reported

81. HEC has issued the NOC for ***Master of Science in Clinical Psychology*** at BULC wef Fall 2021 semester. The program has been advertised through different platforms (social media, newspapers, Outreach, etc) for admissions in Fall 2021 semester. Degree and Transcript title will be as per HEC NOC, "***Master of Science in Clinical Psychology***". Roadmap has been approved for MS in Clinical Psychology, including the course **Research Methods (PPY 702)**.

Discussion

82. Keeping in view the successful launch of the programme and amendment of the Roadmap for the course **Research Methods (PPY 702)**, the point may be dropped.

Decision 40(3908)

83. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	HoD PP (BULC)	-
Statutory Documents Affected:	Nil	

Item 3910: Launch of New Program - Bachelor of Science in Coastal & Marine Sciences at the Department of Maritime Sciences, BUKC

Responsibility: Pro-Rector (RIC)

Decision of 39th (Special) ACM

84. After prolonged deliberations, the Council decided the following:

- a. The proposal for 4-years ***Bachelor of Science in Coastal and Marine Sciences*** Programme may be included in the larger proposal for **School of Maritime Sciences** already under deliberation by the Committee headed by Pro-Rector (RIC).

b. The Committee may evaluate improvement of the proposal in form of a hybrid degree programme, efficacy of a Masters degree in proposed domain instead of a Bachelors degree, launching of summer courses in Maritime/ Coastal Sciences, inclusion of elective courses related to Maritime/ Coastal Sciences in other academic programmes and employability of the students of proposed programme.

85. The point is to remain on agenda and progress be reproted.

Progress Reported

86. Committee constituted vide Registrar Office Order 12/2021 dated 24 May 2021 for the conversion of the Department of Maritime Sciences to the School of Maritime & Applied Sciences has drafted a proposal, which is being technically vetted before submission to the Competent Authority. The Committee has evaluated the program of Coastal & Marine Sciences in light of the decision taken during 39th ACM and analyses of similar program offered by international leading universities. A draft is part of the proposal mentioned earlier, and is expected to be submitted after technical review and vetting.

Discussion

87. HoD (Maritime Sciences) BSEAS-KC briefed the Council the new curriculum being considered for the Maritime Sciences domain. The Chair noted that proposes course *Naval Architecture* may not be suitable as it is already being offered at PNEC. Pro-Rector (RIC) apprised that such courses were part of Phase-III of the proposal being prepared, while the immediate emphasis would be on Phase-I and II. The Chair directed to complete the proposal in early timeframe.

Decision 40(3910)

88. The proposal for School of Maritime and Applied Sciences and the programmes offered therein is to be completed by the Committee in early timeframe. Progress is to be reported in next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	HoD (Maritime Sciences) BSS-KC	Pro-Rector (RIC)
Statutory Documents Affected:		Nil

New Items**Item 4001: Launch of New Program – *Doctor of Philosophy in Computer Science* at BULC**

Sponsor: HoD (CS) BULC

Referral Authority: FBoS-ES

Summary of the Case

89. It was observed during Mock Audit of BULC that the Dept of CS, BULC does not have a PhD Program, resulting in underutilization of PhD faculty members. It was recommended to start the PhD program in the Department. HoD (CS) BULC will present the proposal to launch the *PhD in Computer Science* at BULC wef Fall 2022 Semester, which has been recommended by the FBoS ES and referred to ACM for approval.

Discussion

90. HOD (CS) BULC presented the proposal to launch the *PhD in Computer Science* at BULC wef Fall 2022 Semester. He indicated that Roadmap of proposed programme would be the same as of BUIC and BUKC. Some course descriptions not available in those Roadmaps had also been included in the proposal for BULC. In presented Roadmap, some elective courses were noted for ambiguous essentiality and were advised for identification in terms of Category-I or Category-II courses. One course code was also indicated by CE for related. After further discussion, the Council approved the proposal with corrected Roadmap as placed at **Appendage 4001** (page 84). The Department was asked to display the areas of research offered for the programme on BU website.

Decision 4001

91. Launch of new programme *PhD in Computer Science* at BULC wef Fall 2022 was approved by the Council as per the Roadmap, Elective Courses and their Course Descriptions contained in **Appendage 4001**(page 84); subject to NOC by the HEC. Progress is to be reported in next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD (CS) BULC, DQA	Dir BULC
Statutory Documents Affected:	Nil	

Item 4002: Ratification of One Time Approval of Amended Roadmap and Criteria for Honors and Awards for BS(ES) Spring and Fall 2020 Semesters BBS-KC

Sponsor: HoD (E&ES) BSEAS-KC

Referral Authority: Case File-Acad Dte

Summary of the Case

92. Combined Roadmap for *BS Environmental Sciences* and *BS Geophysics* was approved in 31st ACM, for implementation from Fall 2018. The Roadmap was followed accordingly till Spring 2019. During Spring 2020 and Fall 2020 semesters, previous Roadmap of *BS Environmental Sciences* was implemented by than HOD E&ES, BUKC on grounds of no intake in *BS Geophysics* after Fall 2018. This caused shuffling of courses in different semesters of the students of *BS Environmental Sciences* as described below:

a. **Intake Spring 2019 Semester**

- i. In the 2nd semester, course **MAT 105 Mathematics** was offered in addition to the approved Roadmap.
- ii. Course **HSS 107 Introduction to Psychology** approved for the 4th semester was offered in the 3rd semester, as replacement of approved course **HSS 111 Introduction to IR/Humanities**.

iii. In the 4th semester, course **HSS 201 Introduction to Anthropology** was offered, while it is not included in the approved Roadmap.

b. **Intake Fall 2019 Semester**

- i. Course **ENV 245 Introduction to Oceanography** approved for the 4th semester was offered in the 1st semester; swapping with **MAT 205 Statistics**.
- ii. In the 3rd semester, course **HSS 201 Introduction to Anthropology** was offered, while it is not included in approved Roadmap, as replacement of approved course **HSS 111 Introduction to IR/ Humanities**.
- iii. Course **MAT 205 Statistics** approved for the 3rd semester was offered in the 4th semester; swapping with **ENV 245 Introduction to Oceanography**.

c. **Intake Spring 2020 & Fall 2020 Semesters**

- i. Course **ENV 105 Introduction to Environmental Sciences** approved for the 2nd semester was offered in the 1st semester; swapping with **GEO 105 Physical & General Geology**.
- ii. Course **GEO 105 Physical & General Geology** approved for the 1st semester was offered in the 2nd semester; swapping with **ENV 105 Introduction to Environmental Sciences**.

93. The above stated deviations from approved Roadmap have affected the pre-requisites and course matching for issuance of final transcripts to graduating students, as well as their eligibility for the Honours & Awards due variation from applicable Roadmap.

94. The matter has been resolved by a committee formed at the Campus level through one-time approval by the Competent Authority on the case file, for the course offerings for *BS Environmental Sciences* in variance from approved Roadmap and eligibility of affected students for the Honours & Awards, followed by ratification of both approvals in next ACM.

95. Ratification of the following is accordingly solicited from the Academic Council:

- a. One-time approval for the course offerings for *BS Environmental Sciences* in variance from the approved Roadmap during Spring 2020 and Fall 2020 semesters, by the students of the Intakes of Spring 2019, Fall 2019, Spring 2020 and Fall 2020 semesters at BSEAS-KC, as per **Appendage 4002**.
- b. *BS Environmental Sciences* students of Spring 2020 and Fall 2020 semesters at BSEAS-KC to qualify for BU Honours & Awards for the course offerings provided by the Department, as per Appendage 4002.

Discussion

96. The Chair reiterated the requirement to strictly abide by the approved Roadmaps and pursue changes felt essential through formal channels. After brief discussion, the Council ratified the one-time approval for amended Roadmap of BS (ES) and related Honours & Awards criteria as presented by the Secy Academic Council.

Decision 4002

97. One-time approval for amended Roadmap of BS (ES) and related Honours & Awards criteria as given at **Appendage 4002** (page 109) was ratified by the Council. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	CE, Principal BSEAS-KC	DG BUKC
Statutory Documents Affected:		Nil

Item 4003: Revision of Curriculum – *Master of Science in Computer Engineering*

Sponsor: HoD (CE) BSEAS-IC

Referral Authority: FBoS-ES

Summary of the Case

98. Roadmap for *MS in Computer Engineering* was updated in 34th ACM in accordance with HEC guidelines. With due course of time, it has been observed that failure rate of students in the core course **Digital Signal Processing & Applications** is very high. Keeping in view the HEC guidelines, **Advanced Operating Systems (CSC 720)** has been added to the new list of Core Courses to replace **Digital Signal Processing & Applications (CEN 525)**, while shifting **Digital Signal Processing & Applications (CEN 525)** to the Elective List. Based on the above stated, revised Roadmap/ curriculum of *MS in Computer Engineering* placed at **Appendage 4003** is submitted for ACM approval, for adoption at BSEAS-IC wef Fall 2021 intake.

Discussion

99. Dean MS conveyed concern on downgrading a course from Core to Elective due high failure rate. After further discussion, the change was accepted as conforming to HEC requirements.

Decision 4003

100. Revised curriculum for *Master of Science in Computer Engineering* was approved as presented and placed at **Appendage 4003** (page 112). Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean ES – Updating of CMS and Revised Curriculum	Dean ES
	CE – Updating of SRD and CCH	
	DA – Updating of BU Prospectus	
	DIT – Updating of BU Website	
Statutory Documents Affected:	Nil	

Item 4004: Introducing *Bachelor of Science in Project and Supply Chain Management*

Sponsor: HoD (MS) BBS-IC

Referral Authority: FBoS-MS

Summary of the Case

101. The Faculty of Management Sciences has proposed to introduce a new UG programme, the ***Bachelor of Science in Project and Supply Chain Management***, at BBS-IC to meet the expected manpower requirement for fast moving globalization and particularly the impact of CPEC scenario on the local job market. Details of the proposal, supported by the FBoS (MS), are attached as **Appendage 4004** (Page 116). HOD (MS), BBS-IC will present the proposal for consideration by the Academic Council.

Discussion

102. The proposal was presented by HOD (MS) BBS-IC. The Council noted that a similar programme, BS (SCM), was recently launched in Fall 2020 at BUIC & BUKC which may be adversely affected if the new proposal is approved. Dean MS pleaded the new proposal to be market oriented. After further discussion, the Chair directed to review the proposal for effects on BS (SCM) offered at BUIC & BUKC and success rate of similar programme by other HEIs.

Decision 4004

103. Proposed new programme is to be evaluated for effects on other BU programmes of similar composition and success rate by other HEIs. Progress is to be reported in the next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD (MS) BBS-IC	Dean MS
Statutory Documents Affected:	Nil	

Item 4005: Mapping of BS in Accounting & Finance and BS in Economics Programs with ICAP

Sponsor: HoD (MS) BBS-IC

Referral Authority: FBoS-MS

Summary of the Case

104. Bahria University signed MoU with the Institute of Chartered Accountants of Pakistan (ICAP) in May 2015 for specific course exemptions. Being the two-way agreement, the students were able to transfer credits from BU to ICAP and the other way around. Recently, ICAP as per the HEC Notification No. 15-54/Coord/2019/HEC/(SAD)/451 dated 9 June 2021 has given this exemption to the BS (A&F) program of all universities and institutions across Pakistan. However, problem lies in accommodating the students from ICAP at BU. In order to facilitate/ accommodate the ICAP students/ members in acquiring the respective graduation degree from Bahria University, the Department of Management Studies has mapped the ICAP papers with the BS (A&F) and BS (Economics) Programs. The ICAP students may obtain exemption of the following papers at BU:

- a. AFC (Assessment of Fundamental Competencies) full stage.
- b. CAF (Certificate in Accounting & Finance) papers.

105. ICAP students who have cleared the respective ICAP subjects and members may obtain exemptions in the following mapped subjects of BS Accounting & Finance and BS Economics at BU:

ICAP		BS A&F - Bahria University
AFC-1	Functional English	<ul style="list-style-type: none"> a. English-I b. English-II
AFC-2	Business Communication	<ul style="list-style-type: none"> a. Business Communication b. Presentation & Communication Skills
AFC-3	Quantitative Methods	<ul style="list-style-type: none"> a. Introduction to Statistics b. Maths 1
AFC-4	Introduction to Information Technology	Introduction to IT
CAF-1	Introduction to Accounting	<ul style="list-style-type: none"> a. Principles of Accounting b. Financial Accounting
CAF-2	Introduction to Economics and Finance	<ul style="list-style-type: none"> a. Micro Economics b. Macro Economics
CAF-3	Business Law	<ul style="list-style-type: none"> a. Business Law b. Corporate law
CAF-4	Business Management & Behavioral Studies	<ul style="list-style-type: none"> a. Principles of Management b. Human resource Management

ICAP		BS Economics - Bahria University
AFC-1	Functional English	a. Functional English b. English-II
AFC-2	Business Communication	a. Business Communication Skills b. Oral Communication (Public Speaking Skills)
AFC-3	Quantitative Methods	a. Introduction to statistics b. Business Math
AFC-4	Introduction to Information Technology	IT Skills
CAF-1	Introduction to Accounting	Intro to Financial Accounting
CAF-2	Introduction to Economics and Finance	a. Micro Economics –I b. Macro Economics – I
CAF-4	Business Management & Behavioral Studies	Principles of Management

106. Following conditions will be applicable for claiming exemptions as per BU Rules:

- a. Submission of the result of following papers be duly attested by ICAP:
 - (i) AFC-1 to 4 (Assessment of Fundamental Competencies) full stage.
 - (ii) CAF-1 to 4 (Certificate in Accounting & Finance) papers.
- b. As the papers of ICAP are not graded so the courses exempted will not have any impact over the CGPA calculation, but will be counted as total credit completed at the degree completion.
- c. The students will have to complete all the course outlines, contents, sequences, prerequisites, course objectives and outcomes of BS A&F and BS Eco, as mapped with ICAP.

107. The proposed methodology is recommended by the FBoS MS for the approval of Academic Council.

Discussion

108. HOD (MS) BBS-IC explained the requirement of recognizing the equivalence of ICAP courses with BU programmes BS (A&F) and BS (Economics). DQA inquired whether the proposed equivalence would be reciprocal, to which the Principal BBS-KC intimated that the matter was discussed during her zoom meeting with ICAP senior management, who confirmed that reciprocal exemption was covered in ICAP Policy “Education and Training Scheme 2013” (details at **Appendage 4005**) according to which graduates with minimum 16 years of education from institutions other than specified Degree Awarding Institutes would get exemptions from examinations. It was noted that the exemptions would be as per BU Rules and procedures, whereby the students taking exemptions will have to complete at least 50% courses of BU program roadmap to be eligible for the award of degree.

Decision 4005

109. The Council approved the equivalence of ICAP courses with BU courses of BS (Accounting & Finance) and BS (Economics) as presented (tabulated at para 106) based on the reciprocal Policy of ICAP at **Appendage 4005** (page 141); while abiding by BU Rules and procedures for at least 50% courses of BU program roadmap to be eligible for the award of degree. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principal BBS-IC & KC, Dir BULC	Dean MS
Statutory Documents Affected:	Nil	

Item 4006: Swapping Course in BBA Roadmap – Entrepreneurship (6th to 5th Semester) and Operations Research (5th to 6th Semester)

Sponsor: HoD (BS) BBS-IC

Referral Authority: FBoS-MS

Summary of the Case

110. Department of Business Studies, BBS-IC plans to offer **Entrepreneurship** as a Major from Spring 2021 semester, which is already approved in the 33rd ACM. Students study the core course along with the major courses as per the BBA roadmap. The BS Department suggests that the course **Entrepreneurship** be shifted to the 5th semester so that students have basic knowledge of Entrepreneurship before the Major is opted. Following changes are recommended in the roadmaps of BBA program:

- a. **MGT 363 Entrepreneurship** – from 6th semester to 5th semester.
- b. **RMT 621 Operations Research** – from 5th semester to 6th semester.

111. The FBoS MS has recommended the proposed swapping of courses in BBA Roadmap for approval by the Academic Council.

Discussion

112. HOD (BS) BBS-IC explained the requirement of proposed amendment in BBA Roadmap, which was subsequently approved by the Council.

Decision 4006

113. The Council approved the amendment in BBA Roadmap for swapping of following courses, effective from Spring 2022 semester:

- a. **MGT 363 Entrepreneurship** – from 6th semester to 5th semester.
- b. **RMT 621 Operations Research** – from 5th semester to 6th semester.

114. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean MS – Updating of CMS and Roadmap CE – Updating of SRD DA – Updating of BU Prospectus DIT – Updating of BU Website	Dean MS
Statutory Documents Affected:	Nil	

Item 4007: Ratification of Special Approval of New/ Fresh Courses Registration of Students during Summer 2021 Semester

Sponsor: HoD (BS) BBS-IC

Referral Authority: Case File-Acad Dte

Summary of the Case

115. Mr Muhammad Shumail (Enrl No. 01-111172-127), BBA last semester student at BBS-IC, had completed 141 x CH out of total 144 x CH for the programme. The student requested for registration of 1 new/ fresh courses, **Managerial Economics**, in Summer 2021, which was processed by the Department through a case file. Another student, Ms Anousha Chaudry (Enrl No. 01-111172-135), BBA last semester student at BBS-IC, had completed 138 x CH out of total 144 x CH for the BBA

programme. The student requested for registration of 2 new/ fresh courses, **Financial Management** and **Managerial Accounting** in Summer 2021 semester, which was processed by the Department through a case file.

116. Both applications were given due consideration by the Competent Authority and approved as special case due Covid-19 pandemic; to facilitate the students in timely completing their degree programme. The Academic Council may please ratify the above explained cases; approved on respective case files.

Discussion

117. After brief discussion, the Council ratified the approvals accorded on case files.

Decision 4007

118. Approval of new/ fresh courses registration to Mr Muhammad Shumail (Enrl No. 01-111172-127) and Ms Anousha Chaudry (Enrl No. 01-111172-135) of BBS-IC during Summer 2021 semester as special case due Covid-19 pandemic ratified by the Council. Point Dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	CE, HOD (BS) BBS-IC	Principal BBS-IC
Statutory Documents Affected:	Nil	

Item 4008: Ratification of Ex-Post Facto Approval for Time Bar Waiver – Rao Asad Ullah EMBA - NCMPR/BUKC

Sponsor: Principal BBS-KC

Referral Authority: Case File-Acad Dte

Summary of the Case

119. Rao Asadullah (Enrl No. 04-270141-004) was registered at NCMPR, BUKC in Spring 2014 for the EMBA programme. The student completed 66 x CH out of required 69 x CH and was declared time barred effective from Fall 2016 while his Thesis (3 x CH) was pending completion. His request for time bar waiver was processed in July 2019 but not approved by the Competent Authority. In July 2021 the student approached the BUHO with intimation that his Thesis Defense had already been conducted in January 2019 but the result withheld due time bar application. This information had not been shared with BUHO earlier when his previous time bar waiver application was processed by the Dept. The matter was given due consideration by the Competent Authority and the fresh application for time bar waiver approved ex-post facto as a special case, subject to ratification by the Academic Council.

120. The Council may accordingly ratify the time bar waiver to Rao Asadullah (Enrl No. 04-270141-004) ex-post facto as a special case, to enable acceptance of his Thesis defense conducted in January 2019 for the completion of EMBA programme.

Discussion

121. Principal BBS-KC briefed the Council about the background of the case, after which the approval was ratified.

Decision 4008

122. The Council ratified ex-post facto time bar waiver to Rao Asadullah (Enrl No. 04-270141-004) to enable acceptance of his Thesis defense conducted in January 2019 for the completion of EMBA programme at BUKC. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	CE, HOD (BS) BBS-KC	Principal BBS-KC
Statutory Documents Affected:	Nil	

Item 4009: Vision and Mission of BH3S for Alignment with the BU Mission and Vision

Sponsor: Principal/ Associate Dean, BH3S-KC

Referral Authority: FBoS-H&SS

Summary of the Case

123. Vision and Mission of Bahria Humanities & Social Sciences School (BH3S), IC and KC has been formulated by a committee constituted by Dean H&SS; headed by Dr. Oyoon Abdul Razzaq (BH3S-KC) with Dr. Farrukh Shehzad (BH3S-IC) and Mr. Asad Shoaib (BH3S-IC) as its Members. Vision and Mission proposed by the Committee were subsequently finalized in an online meeting of the faculty members, as follows:

VISION

To emerge as an internationally reputable school in Humanities and Social Sciences that sets highest standards in multidisciplinary academic and professional fields by fostering values of excellence, integrity, inclusiveness and critical self-reflection to nurture knowledgeable and socially responsible citizens.

MISSION

To achieve the highest level of intellectual progress by offering a conducive learning environment to the students where they can critically analyze, acquire and disseminate knowledge and conduct robust research in the domain of social sciences. Moreover, the school enables its students to understand complex social realities of the world and to explore creative solutions by applying contemporary knowledge and research.

OBJECTIVES

In order to achieve the above stated Vision and Mission, the following objectives have been worked out:

- a. To equip students with the knowledge, values and ethics that are required to meet the challenges faced by individuals, groups, organizations and communities in the changing global environment.
- b. To prepare students with the required skills to creatively deal with the most pressing societal issues and challenges.
- c. To develop a sense of social responsibility and commitment among our students to constructively contribute to the society.

124. The FBoS H&SS has recommended the approval of Vision, Mission and Objectives for the BH3S, IC and KC as presented, for approval by the Academic Council.

Discussion

125. It was agreed that the Vision, Mission and Objectives should be processed on case file for thorough evaluation and approval of the competent authority, followed by ratification in the ACM.

Decision 4009

126. Vision, Mission and Objectives of BH3S-IC and KC are to be processed on case file for approval of the competent authority, followed by ratification in the next ACM. Progress to be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principals BH3S-IC & KC	Dean H&SS
Statutory Documents Affected:	Nil	

Item 4010: Vision, Mission and Objectives Humanities and Social Sciences Department

Sponsor: HoDs (H&SS) BH3S-IC & KC

Referral Authority: FBoS-H&SS

Summary of the Case

127. Bahria Humanities and Social Sciences School (BH3S) at Karachi Campus has launched the UG programs **BS in English** and **BS in Public Health** by contemplating the Vision, Mission and Objectives of BU. The Department was put in place in Fall 2013 as the Dept of Humanities and Natural Sciences, to provide faculty to other departments for multidisciplinary courses. In Fall 2017, the Dept was reviewed for its enhanced role to conduct academic programs like other academic departments, and proposed to be renamed as the Dept of Humanities and Social Sciences (H&SS). The Vision and Mission proposed for the Dept, as required vide previous FBoS (H&SS), are covered below:

VISION

To become a compatible Department of International repute within the domains of Humanities and Social Sciences by contributing to multidisciplinary fields of knowledge and undertaking research for providing solution of social issues to the society.

MISSION

To develop and maintain a sustainable base of commitment in promoting excellence in education and research pertaining to humanities and social sciences, educate young minds on seeking solution of societal issues and develop acceptable personality traits as to become socially responsible and professionals of their fields.

OBJECTIVES

In order to achieve the above stated Mission, the Dept of H&SS has set forth the following objectives:

- a. To produce high quality graduates of humanities and social sciences who could put into practice the theories of relevant fields for seeking solution of societal issues.
- b. To produce researchers in the field of humanities and social sciences for self-grooming and societal development in short and long terms.
- c. To provide appealing and convincing solutions to organizations on social challenges in national and international perspectives so as to develop mind set of values and human prosperity.
- d. To produce graduates who could develop understanding of diverse social background for collaborations and coexistence within the society of Pakistan and in the comity of nations for global acceptance and cohesion.

128. The FBoS H&SS has recommended the approval of the stated Vision, Mission and Objectives for the Dept of H&SS by the Academic Council.

Discussion

129. It was agreed the Vision, Mission and Objectives should be processed on case file for thorough evaluation and approval of the competent authority, followed by ratification in the ACM.

Decision 4010

130. Vision, Mission and Objectives of H&SS Department, BH3S-IC and KC are to be processed on case file for approval of the competent authority, followed by ratification in the next ACM. Progress to be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HODs (H&SS) BBS-IC & KC	Dean H&SS
Statutory Documents Affected:	Nil	

Item 4011: Vision, Mission and Objectives - Islamic Studies Department

Sponsor: HoDs (Islamic Studies) BH3S-IC & KC

Referral Authority: FBoS-H&SS

Summary of the Case

131. The faculty members of Islamic Studies Departments at Islamabad and Karachi Campuses have formulated Vision and Mission of the Dept as required vide previous FBoS (H&SS); covered below:

VISION

To equip individuals with the necessary knowledge and skills, building their Islamic worldview through which they become able to understand, respond and confront positively to the challenges of the modern world.

MISSION

Imparting quality education using modern techniques and tools concerning Islamic studies aiming to become an institution of international repute in the field. In addition, providing them with opportunities to hone their research and communication skills so as to promote a vibrant environment for dialogues and discussions around the modern challenges of the world. We strive to produce individuals who can act as effective social agents to produce positive social change in the world by advocating a holistic Islamic worldview.

OBJECTIVES

- a. To prepare graduates with comprehensive and constructive Islamic knowledge and provide opportunities to excel in every walk of life.
- b. To enhance creativity in students assisting them to develop critical thinking so that they can produce reflective and analytical research.
- c. To focus on communication skills so that the students are able to develop better strategies for conflict resolution in a multicultural society.
- d. To help students embody Islamic virtues enabling them to be productive for the Muslim community (Ummah).
- e. To strengthen the values of honesty, justice, bravery, leadership and humility by reconnecting 21st century generation with the legends of Islamic history.

132. The FBoS H&SS has recommended the approval of Vision, Mission and Objectives of the Dept of Islamic Studies as presented, by the Academic Council.

Discussion

133. It was agreed the Vision, Mission and Objectives should be processed on case file for thorough evaluation and approval of the competent authority, followed by ratification in the ACM.

Decision 4011

134. Vision, Mission and Objectives of Islamic Studies Department, BH3S-IC and KC are to be processed on case file for approval of the competent authority, followed by ratification in the next ACM. Progress to be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HODs (Islamic Studies) BH3S-IC & KC	Dean H&SS
Statutory Documents Affected:	Nil	

Item 4012: Approval of Updated & Unified Mission and Vision of the Department of Media Studies, BH3S-IC & KC

Sponsor: HoDs (Media Studies) BH3S-IC & KC

Referral Authority: FBoS-H&SS

Summary of the Case

135. After a thorough discussion with the Dept of Media Studies BH3S-KC, the Dept of Media Studies BH3S-IC has proposed an updated Vision and Mission of the Departments of Media Studies at BH3S-IC & KC as per latest trends in Media Studies, as follows:

VISION

To produce a generation of creative, critical, skillful, and socially responsible media graduates who can play effective roles in their respective career choices in an increasingly mediated world.

MISSION

To provide a conducive learning environment for its students to develop their academic, research, and critical skills to make them highly relevant in media industry nationally and internationally. The focus of the department is to groom media graduates to take on an entrepreneurial and constructive approach.

OBJECTIVES

The Department of Media Studies offers a variety of programs ranging from BS to PhD levels. The Media Studies Department BUIC seeks to provide Students with:

- a. Knowledge, professional skills, and research on media communication.
- b. Nurture Students' ability to effectively communicate in both writing and verbally through various forms of media meaningfully and effectively.
- c. Contemporary media Knowledge to achieve higher academic excellence and successful career in media industry and beyond.

136. The FBoS H&SS has recommended the approval of Vision, Mission and Objectives of the Dept of Media Studies as presented, by the Academic Council.

Discussion

137. It was agreed the Vision, Mission and Objectives should be processed on case file for thorough evaluation and approval of the competent authority, followed by ratification in the ACM.

Decision 4012

138. Vision, Mission and Objectives of the Dept of Media Studies, BH3S-IC and KC are to be processed on case file for approval of the competent authority, followed by ratification in the next ACM. Progress to be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HODs (Media Studies) BH3S-IC & KC	Dean H&SS
Statutory Documents Affected:	Nil	

Item 4013: Align Vision and Mission with BS in English Program Goals

Sponsor: HoD (H SS) BH3S-KC

Referral Authority: FBoS-H&SS

Summary of the Case

139. Devise program Vision and Mission and align with Program goals to achieve core objectives and outcomes in all **BS in English** course outlines.

VISION

To broaden and deepen the understanding of the relationship between literature, language and society. They are directed towards the development of an extensive understanding of key literary & linguistic concepts through research and theories to provide solutions pertaining to language acquisition, and language learning practices.

MISSION

To acculturate students with research-based knowledge by equipping them with modern theories & technicalities of English Literature and Language. The program is committed to prepare responsible students with critical thinking, transformational skills, research-based inquiry and professional approach to serve the society.

Program Objectives (POs)	Program Objectives (PLOs)
PO 1: Build relationship with literature and society	PLO 1: to demonstrate the conventions of diverse textual genres (e.g. the non-fiction essay, poetry, autobiography, novel, memoir, films, plays, editorials and so forth) in their own work and to make world a better place. PLO 2: to employ the literary and rhetorical methods and strategies in reading and writing of texts.
PO2: Apply modern theories and technology	PLO 3: to equip students with the ability to analyze information sources in print and electronic media.

PO 3: Inculcate transformational skills	PLO 4: to construct clear, grammatical sentences and produce well-organized texts that exhibit attention to audience, genre and purpose.
PO 4: Develop research and pedagogy	PLO 5: to excel in research, textual criticism, analytical skills and pedagogical methods.
PO 5: Develop soft skills and produce lifelong learners	PLO 6: to enable students to improve their writing skills, presentation and public speaking skills and apply these professionally outside the classroom to become life-long learners.
PO 6: Infuse moral and ethical values	PLO 7: to assist in developing their employability skills with effective use of moral and ethical values in the real world.
PO 7: Build relationship with language and society	PLO 8: to build relationships between language and society in order to provide solutions to the social issues.

140. The FBoS H&SS has recommended the approval of Vision, Mission, Programme Objectives and Programme Learning Objectives for **BS in English** as presented, by the Academic Council.

Discussion

141. It was noted that Vision and Mission may not be required for an academic programme. However, all BU Schools need to have their respective Vision and Mission statements aligned with BU Vision and Mission, along with the Vision and Mission of respective academic departments, and processed for the approval by the competent authority through Pro-Rector (Acad) followed by ratification by the Academic Council. It was further discussed that Programme Objectives (POs) and Programme Learning Outcomes (PLOs) of all academic programmes being offered by BU should be formulated and approved by FBOS; followed by ratification by the Academic Council. However, Course Learning Objectives (CLOs) should be approved in respective DBOS and ratified in related FBOS.

Decision 4013

142. The following was decided:

- Vision and Mission of all BU Schools and their respective Departments are to be formulated and processed for competent authority approval through Pro-Rector (Acad), followed by ratification by the Academic Council.
- Programme Objectives (POs) and Programme Learning Outcomes (PLOs) of all academic programmes are to be approved in respective FBOS and ratified in subsequent ACM.
- Course Learning Objectives (CLOs) are to be approved in respective DBOS and ratified in subsequent FBOS.
- Progress is to be reported in the next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	All Principals, Dir BULC, DAcad	All Deans
Statutory Documents Affected:	Nil	

Item 4014: Language Center and Summer Courses at Department of Humanities and Social Sciences at BH3S-IC

Sponsor: HoD (H&SS) BH3S-IC

Referral Authority: FBoS-H&SS

Summary of the Case

143. During Departmental presentation to honorable Rector Bahria University on 16 March 2021, it was proposed to establish the language center for short language courses at the Dept of H&SS, IC. The Dept of H&SS, IC was tasked to prepare a concept paper which has been formulated accordingly and recommended by the FBoS H&SS for approval in the ACM. HOD (H&SS) BH3S-IC will present the proposal for consideration by the Academic Council.

Discussion

144. HOD (H&SS) presented the launch proposal as placed at **Appendage 4014** (page 142), comprising of English and French language courses. The Chair directed to include the Chinese and Arabic language learning too. For bifurcation of language courses between the Dept of H&SS and the LDC, the Chair advised that the Dept of H&SS should formulate the language courses of 3 credit hours each – adjustable within the Roadmaps – and conducted by the Dept of H&SS, while the non-Roadmaps based language courses should be formulated and conducted by the LDC; in both cases using the existing infrastructure. The Chair further directed the HOD to prepare and process a concept paper for setting up of an exclusive Language Centre if deemed essential.

Decision 4014

145. The following was decided:

- a. Language learning through existing infrastructure is to be expanded by the HOD (H&SS)-IC by including the Chinese and Arabic languages.
- b. The Dept of H&SS is to formulate and conduct the language courses of 3 credit hours each which are adjustable within the Roadmaps of academic programmes being offered; using the existing infrastructure.
- c. Non-Roadmaps based language courses are to be formulated and conducted by the LDC; using the existing infrastructure.
- d. HOD (H&SS) BBH3S-IC is to prepare and process a concept paper for setting up of an exclusive Language Centre, if deemed essential.
- e. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD (H&SS) BH3S-IC, Dir LDC	Dean H&SS
Statutory Documents Affected:	Nil	

Item 4015: Launch of New Program - *Bachelor of Science in English* at BH3S-IC

Sponsor: HoD (H&SS) BH3S-IC

Referral Authority: FBoS-H&SS

Summary of the Case

146. Department of H&SS BH3S-IC intends to launch its separate **BS in English** program, which is already launched and working very well in BH3S-KC. The program is guided by the aim to train students to undertake independent research with minimal guidance; to equip them with a wide range of transferable cognitive, practical and key skills, and a foundation for further study, employment and lifelong learning. Details of the proposal, supported by the FBoS (H&SS), are attached as **Appendage 4015**. HoD (H&SS), BH3S-IC will present the proposal for consideration by the Academic Council.

Discussion

147. HoD (H&SS), BH3S-IC presented the proposal for consideration by the Academic Council. During subsequent discussion, it was agreed to amend the eligibility criteria to exclude the SSC result, while retaining the HSSC result, the Admission Test result and the Interview. Financial Effects were noted to exclude the cost of required faculty members. Some course codes needed to be reviewed for alignment with related BU Policy, while POs and PLOs also need to be ratified by the Academic Council. After further discussion, the new programme was approved with corrections as described above, for implementation with effect from Spring 2022.

Decision 4015

148. Launch proposal for the *Bachelor of Science in English* is approved with amended eligibility criteria and the Roadmap at **Appendage 4015** (page 147); with effect from Spring 2022 semester. POs and PLOs of the programmes are to be formulated and processed for approval by the competent authority, followed by ratification by the Academic Council. Progress is to be reported in the next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean H&SS – Updating of CMS and Roadmap	Dean H&SS
	CE – Updating of SRD and CCH	
	DA – Updating of BU Prospectus	
	DIT – Updating of BU Website	
Statutory Documents Affected:	Nil	

Item 4016: Launch of New Program - *Master of Science in Government and Public Policy* at BH3S-IC

Sponsor: HoD (H&SS) BH3S-IC

Referral Authority: FBoS-H&SS

Summary of the Case

149. H&SS Dept BH3S-IC intends launch of MS Degree Program in *Government and Public Policy* due to its very much importance and rising demand; adding diversity to the programs being conducted at Islamabad Campus of Bahria University. Islamabad is the hub of government offices, donor agencies, NGOs, think tanks and international missions and hence there is continuous need of trained human resource in the field of Public Policy. The proposal is supported by the FBoS (H&SS). HoD (H&SS), BH3S-IC will present the proposal for consideration by the Academic Council.

Discussion

150. HOD (H&SS) BH3S-IC presented the proposal to launch the *Master of Science in Government and Public Policy* at BH3S-IC. The proposal was discussed threadbare and approved by the Council as presented, while reviewing the Minimum Entry Level to accept 16 years' education in any discipline from HEC recognized HEI and asking for the review of Financial Details to include the faculty members to be employed.

Decision 4016

151. Launch of *Master of Science in Government and Public Policy* at BH3S-IC is approved for commencement from Fall 2022 semester, subject to NOC from HEC, with amended Minimum Entry Level and the Roadmap as contained in **Appendage 4016** (page 154). Financial Details of the launch proposal are to be reviewed for inclusion of required faculty members and the progress is to be reported in the next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principal BH3S-IC , DQA	Dean H & SS
Statutory Documents Affected:	Nil	

Item 4017: Launch of New Program - *Bachelor of Science in Mathematics* at BH3S-KC

Sponsor: HoD (H&SS) BH3S-KC

Referral Authority: FBoS-H&SS

Summary of the Case

152. H&SS Dept of BH3S-KC has proposed to launch a new program of *BS in Mathematics* at Undergraduate level, which includes brief description about the basic as well as advanced and applied courses of Mathematics; assisting students to enhance their quantitative. This degree prepares students for a career in the public and private sectors. The graduates can pursue for further studies, or in work finance, consultancy, advertising, management, banking, marketing, accountancy, commerce, education, research and IT. Details of the launch proposal, supported by the FBoS (H&SS), are attached as **Appendage 4017**. HoD (H&SS), BH3S-KC will present the proposal for consideration by the Academic Council.

Discussion

153. HoD (H&SS), BH3S-KC presented the proposal to launch the *Bachelor of Science in Mathematics* at BH3S-KC. DQA indicated that the *Master of Science in Mathematics* was already approved for the same CU which had not been commenced to date. The HOD explained that the MS programme was anticipated to attract less applicants in absence of an UG programme by the CU. DAcad highlighted that the proposal for MS programme was tabled in the 36th ACM too and not approved at that time. He further indicated that the same programme is being offered by the CS Dept (BSEAS) at BUIC. The proposal was then discussed in detail and Financial Details noted to be reviewed. After extensive evaluation, the Council gave in-principle approval to the proposal, while asking for a review of the Financial Details to justify its cost effects.

Decision 4017

154. Launch the *Bachelor of Science in Mathematics* at BH3S-KC from Fall 2022 semester was in-principle approved by the Council, along with the Roadmap and Elective courses at **Appendage 4017** (page 170); while asking for a review of the Financial Details to justify the cost effects. Progress is to be reported in the next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean H&SS – Updating of CMS and Roadmap CE – Updating of SRD and CCH DA – Updating of BU Prospectus DIT – Updating of BU Website	Dean H&SS
Statutory Documents Affected:	Nil	

Item 4018: Introduction of Mandatory Media Lab Hours for *BS in Television Broadcasting and Digital Media* from Fall 2021

Sponsor: HoD (Media Studies) BH3S-IC

Referral Authority: FBoS-H&SS

Summary of the Case

155. The field of TV Broadcasting and Digital Media is changing on a rapid pace. The need of practical learning at undergraduate level is ever increasing and the proposed idea will enable

students to stay relevant in their upcoming professional careers. Keeping in view the practical nature of the degree program and industry feedback, the Dept of Media Studies has proposed to add mandatory Media Lab hours in *BS in Television Broadcasting and Digital Media* from Fall 2021 semester. One permanent faculty member is proposed to be nominated as Practical Learning Coordinator to facilitate students, trainers as well as the faculty members and also to keep complete record of PLL activities. HoD (Media Studies) BH3S-IC will present the proposal for consideration by the Academic Council.

Discussion

156. HoD (Media Studies) BH3S-IC presented the proposal as per the contents at **Appendage 4018** (page 196). The requirement was considered justified by the Council, minus the provision of a permanent faculty member as Practical Learning Coordinator. The Chair directed that, while the Dept may appoint a faculty member for proposed role, his/ her Course Load Waiver would have to be processed separately for consideration by the competent authority.

Decision 4018

157. The Council approved mandatory Media Lab Hours in the programme *BS in Television Broadcasting and Digital Media* at BH3S-IC from Fall 2021 semester as contained in **Appendage 4018** (page 196). Modalities for its depiction in the Final Transcript are to be worked out by Dean H&SS and the CE. Progress to be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean H & SS – Updating of CMS and Curriculum	Dean H & SS
	CE – Updating of SRD and CCH	
	DA – Updating of BU Prospectus	
	DIT – Updating of BU Website	
Statutory Documents Affected:	Nil	

Item 4019: Inclusion of New Electives in *MS in Media Studies* Roadmap

Sponsor: HOD (Media Studies) BH3S-KC

Referral Authority: FBoS-H&SS

Summary of the Case

158. The Department of Media Studies proposed addition of new elective courses in *MS in Media Studies* roadmap to make this program market competitive. Proposed Elective Courses along with course codes are as follows:

Proposed Course Code	Course Title	Credit Hours
MSM 619	Film Studies and Critique	3
MSM 620	Media and Human Rights	3

159. The FBoS H&SS has recommended the case to be presented in ACM for approval.

Discussion

160. HOD (Media Studies) BH3S-IC presented the proposal for 2 x new Electives in the Roadmap for *Master of Science in Media Studies*. While reviewing the new Electives being proposed, Course Description of **Film Studies and Critique** was noted by the Chair as based on country-specific cinema. He advised to review the related Outline for standardized local & international cinema. The Council thereafter approved the proposed new courses along with revised Outline, as given at **Appendage 4019**.

Decision 4019

161. Inclusion of 2 x new Electives in the Roadmap for *Master of Science in Media Studies* was approved by the Council, with revised Outline as given at **Appendage 4019** (page 201). Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean H&SS – Updating of CMS Curriculum	Dean H&SS
	CE – Updating of SRD and CCH	
	DA – Updating of BU Prospectus	
	DIT – Updating of BU Website	
Statutory Documents Affected:	Nil	

Item 4020: Ratification of BSS (Sociology) Roadmap

Sponsor: HoD (H&SS) BH3S-IC

Referral Authority: Case File

Summary of the Case

162. In 38th ACM Agenda Item 3656, the Council approved in-principle the launch of BSS with Sociology stream; with the decision to process the approval on case file followed by ACM ratification. The Roadmap for BSS (Sociology) as a stream has been accordingly approved on case file, as placed at **Appendage 4020**, which is to be offered in Spring 2023 to the students who have been enrolled in BSS program in Fall 2021. The Roadmap is submitted for ratification by the Academic Council.

Discussion

163. After brief discussion, the Council ratified the BSS (Sociology) Roadmap as approved on case file.

Decision 4020

164. The Council approved the *Sociology* stream/ Major in the *Bachelor of Social Science* programme at BH3S-IC with the Roadmap placed at **Appendage 4020** (page 208) from Intake of Fall 2021 Semester. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean H & SS – Updating of CMS and Roadmap	Dean H&SS
	CE – Updating of SRD and CCH	
	DA – Updating of BU Prospectus	
	DIT – Updating of BU Website	
Statutory Documents Affected:	Nil	

Item 4021: Vision, Mission, Objectives and Outcomes of the Institute of Professional Psychology and Departments of Professional Psychology and its Programs

Sponsor: Dean PP

Referral Authority: FBoS-PP

Summary of the Case

165. Vision and Mission statements are critically important for an organization's planning and strategy. Most established entities resort to uniform Vision and Mission. At an HEI these travel down to the level of faculty and departments. To that end, the Faculty of Professional Psychology has proposed new Vision and Mission, commensurate with new Vision and Mission of Bahria University. Learning objectives and outcomes have also been proposed for each of the programs; duly approved by the FBoS PP.

166. Approval of the Academic Council is sought for the Vision, Mission, Objectives and Outcomes for the Institute of Professional Psychology (BUKC) and the Departments of Professional Psychology (BH3S-IC and BULC) and their programs as given at **Appendage 4021** (page 212).

Discussion

167. It was agreed that the Vision, Mission and Objectives should be processed on file for thorough evaluation and approval of the competent authority, followed by ratification in the ACM.

Decision 4021

168. Vison, Mission and Objectives of IPP, the Dept of PP at BUIC & BULC and their Programmes are to be processed on file for approval of the competent authority, followed by ratification in the next ACM. Progress to be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD PP - IPP, BUIC & BULC	Dean PP
Statutory Documents Affected:		Nil

Item 4022: Formal Approval of the Name "Bahria University College of Physical Therapy" (BUCPT)

Sponsor: Vice Principal BUCPT

Referral Authority: FBoS-HS

Summary of the Case

169. The College was established at BUMDC in 2017 with the name of Bahria University College of Physical Therapy (BUCPT). As per requirement, approval of name from the Academic Council is mandatory. The FBoS HS has recommended the case for approval by the Academic Council.

Discussion

170. After brief discussion, the Council approved the proposal for adoption.

Decision 4022

171. The Council approved the formal recognition of the **Bahria College of Physical Therapy (BUCPT)** at the Bahria University Health Sciences Campus (BUHSC) Karachi with immediate effect, with the mandate to conduct the *Doctor of Physical Therapy* programme. Organogram of the College is to be processed separately for approval by the competent authority.

Action Required	Action by	Responsibility of
Implementation of the Decision	Vice Principal BUCPT, Registrar	Dean HS
Statutory Documents Affected:		Updating of BU Statutes

Item 4023: Mission of Bahria University College of Physical Therapy

Sponsor: Vice Principal BUCPT

Referral Authority: FBoS-HS

Summary of the Case

172. Bahria University College of Physical Therapy was launched at BUMDC in February 2017; the First batch qualifying in February 2022. The following Mission of the College needs approval by ACM:

MISSION

To pursue academic excellence in preparing competent professionals through patient centric, evidence-based physical therapy education at par with national and international standards in order to improve the health and well-being of the society.

ALIGNMENT OF DPT MISSION WITH BU MISSION

<u>BU VISION</u>	<u>DPT Mission</u>			
Knowledge	Competence	Evidence Based Physical Therapy Education	Academic Excellence	
Creativity Driven	Competent Professionals	Evidence Based Physical Therapy Education		
International University	Academic Excellence	Competence	Evidence Based Physical Therapy Education	National and International linkages
Development of Society	Competence	Professionals	Patient centric approach	Compassionate towards well-being of Society

173. The FBoS HS has recommended the case for approval by the Academic Council.

Discussion

174. It was agreed that the Mission of BUCPT should be processed on file for thorough evaluation and approval of the competent authority, followed by ratification in the ACM.

Decision 4023

175. Mission of BUCPT is to be processed on file for approval of the competent authority, followed by ratification in the next ACM. Progress to be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Vice Principal BUCPT	Dean HS
Statutory Documents Affected:		Nil

Item 4024: Approval of Mission Statement of BS in MLT (Medical Lab Technology) Program for alignment with BU Vision

Sponsor: Dr. Mehreen Lateef, HOD MLT/MDRL

Referral Authority: FBoS-HS

Summary of the Case

176. BS in MLT Program Mission Statement was revised as per latest BU Vision and needs to be formally approved by the Statuary Body, BU Academic Council, for implementation. The Mission statement is as follows:

“To prepare laboratory professionals with knowledge and skills as per international standards required for practice with innovative research expertise in a collegiate environment through linkages for provision of high quality services in the health care system”.

177. Mission Statement for BS MLT Program, recommended by FBoS HS, is submitted for approval by the Academic Council.

Discussion

178. It was agreed that the Mission of BS in MLT should be processed on file for thorough evaluation and approval of the competent authority, followed by ratification in the ACM.

Decision 4024

179. Mission of academic programme *Bachelor of Science in Medical Lab Technologies* is to be processed on file for approval of the competent authority, followed by ratification in the next ACM. Progress to be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD (MLT) BUMDC	Dean HS
Statutory Documents Affected:	Nil	

Item 4025: Formal Approval for Establishing “Bahria University College of Allied Health Sciences”

Sponsor: HoD MLT/ MDRL

Referral Authority: FBoS-HS

Summary of the Case

180. A deficiency in Academic Mock Audit was identified that the name “College of Allied Health Sciences” has not been formally approved by the Statutory Body. The approval is also required as a documented evidence for PMC Inspection Proforma 2021 to meet the standard requirement of: **“Establishment of an Institute for Allied Health Professionals or paramedics within ten years of its recognition”**. To establish Allied Health Sciences College, working paper for infrastructure and proposed building was approved as part of Allied Health Complex in 41st BOG meeting. In this regard, work by Consultant is in process.

181. Academic program **BS in MLT** has been started to initiate first step of developing a College of Allied Health Professionals after the decision of 32nd ACM, which is successfully running under the umbrella of the Medical College with induction of 4 x batches. However, name of the College needs approval from the Academic Council. Accordingly, establishment of **Bahria University College of Allied Health Sciences** is recommended by FBoS HS for approval by the Council, to meet the requirement of Pakistan Medical Commission (PMC).

Discussion

182. HOD (MLT) BUMDC presented the proposal for approval of establishing the Bahria University College of Allied Health Sciences at BUHSC, Karachi. After detailed discussion on the working of the proposed College, the Council accorded in-principle approval subject to processing of the organogram, infrastructure and phase-wise adoption methodology.

Decision 4025

183. The Council approved in-principle the setting up of the **Bahria University College of Allied Health Sciences (BUCAHS)** at BUHSC, Karachi. Organogram and infrastructure of the College are to be formulated and processed for approval of the competent authority, along with phase-wise adoption methodology, followed by ratification by the Academic Council. Progress is to be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD (MDRL) BUMDC	Dean HS
Statutory Documents Affected:	Nil	

Item 4026: House Job for DPT Students

Sponsor: Vice Principal BUCPT

Referral Authority: FBoS-HS

Summary of the Case

184. DPT is 5-years degree program started in February 2017. With the first batch qualifying in February 2022, DPT students require to undergo 1-year House Job mandatory by the HEC. Most of the public and private institutes are offering the House Job to DPT students. It is recommended to approve paid house job to all qualified graduates of DPT from BUCPT at PNS SHIFA. The FBoS HS has recommended the case for approval by the ACM. Financial Effects of the proposal are placed at **Appendage 4026** (page214).

Discussion

185. The Council noted that paid House Job to DPT graduates would entail financial commitment of the BU, which require a review of prevailing fee structure. The House consented for the proposed paid House Job to the DPT graduates, subject to review of prevailing fee structure.

Decision 4026

186. The Council approved the proposed paid House Job for DPT graduates of BUCPT at Rs 15,000 per month; to be arranged at PNS Shifa. Fee structure of the DPT programme is to be reviewed so as to include revised cost effects within student fee and the case processed separately. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Vice Principal BUCPT, Treasurer, DA, DIT	Dean HS
Statutory Documents Affected:	Updating of BU Prospectus and website	

Item 4027: Approval to Launch Doctor of Philosophy (PhD) Program under the Faculty of Health Sciences at BUMDC

Sponsor: Chairperson PGP-TM

Referral Authority: FBoS-HS

Summary of the Case

187. MPhil programs were launched at BUMDC in Fall 2017, in three Basic Medical Sciences subjects: Anatomy, Pathology and Pharmacology. MPhil program in remaining two subjects of Basic Medical Sciences – Biochemistry and Physiology - will start in Fall 2021. Vertical extension of these MPhil programs as PhD programs needs to be initiated to meet the goals of BU Vision 2030 in order to enhance the growth of BUMDC as well as the ranking of BU. Further, PhD faculty is scarce in Health Sciences subjects; specially in Anatomy, Pathology (Histopathology) and Public Health (Community Health Sciences). The BUMDC has, therefore, proposed to launch a common PhD program under Faculty of Health as placed at **Appendage 4027** (page 215). Sciences. In-principle approval of the same may be considered by the Academic Council, for subsequent submission of comprehensive proposal (if principally approved).

Discussion

188. Chairperson PGP-TM BUMC gave the presentation for proposed PhD programme. The title of PhD program i.e. *PhD in Health Sciences* or *PhD in specific domain of Health Sciences* was deliberated in detail. After discussion on all related aspects, the Council approved the launch proposal in-principle, while asking for the comprehensive proposal in the next ACM.

Decision 4027

189. The Council approved in-principle the launch of PhD programme under the Faculty of HS at BUHSC. Comprehensive proposal to this effect is to be presented in the next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	Chairperson PGP-TM BUMC	Dean HS
Statutory Documents Affected:	Nil	

Item 4028: Formal Approval for Induction of Civilian Students in BS (Nursing) Program at PNNC

Sponsor: Vice Principal BUMDC

Referral Authority: Case File-DHS

Summary of the Case

190. Dean BUMDC has proposed to commence induction of civilian students in BSN programme conducted at PNNC from Spring 2022 semester. Vice Principal BUMDC will present the case, as per detail attached as **Appendage 4028** (page 215).

Discussion

191. Vice Principal BUDC presented the proposal for induction of civilian students at PNNC. DAcad indicated that proposed fee structure was to be reviewed for conformance with credit hours based calculations. He further highlighted the requirement of BU management control over the PNNC for the civilian students' cadre. DG BUHSC reiterated that the management of service students would remain with PN/ PNS Shifa while BUHSC would be responsible for the civilian students inducted through its own admissions process. The Chair advised to appoint a suitably qualified Director PNNC through BU channel, along with Principal PNNC being the uniformed officer, for overall administrative control of PNNC as a CU of BU. Regarding hostel requirement, DG BUHSC explained that initial admissions would be preferred for the Karachi-based applicants, while as long-term measure one floor of the under-construction building of PNNC would comprise the hostel facility. DQA proposed to enable the hostel availability to make the programme more attractive as prospective applicants were more likely to be of outstation background. The Chair asked the DG BUHSC to resolve the short-term hostel availability for female students on priority, through suitable rented premises. After further discussion, the proposal to induct civilian students at PNNC from Spring 2022 semester was approved by the Council, with review of proposed fee structure.

Decision 4028

192. The Council approved to induct the civilian students at PNNC as BU students from Spring 2022 semester onward. Principal NC is to process the case of a suitably qualified Director PNNC through BU channel, while reviewing the fee structure of civilian students in conformance with standard credit-hours based calculations, and arranging hostel facilities for female students through suitable rented premises. Progress is to be reported in the next ACM.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principal PNNC, Dean HS	DG BUHSC
Statutory Documents Affected:	Nil	

Item 4029: Amendment in the Title of Joint Transcript Between Shifa College of Nursing (SCN) and Bahria University for Bachelor of Science in Nursing (Post RN) Programme

Sponsor: Controller of Examinations

Referral Authority: Case File-CE

Summary of the Case

193. Shifa College of Nursing (SCN) was affiliated with BU for conduct of Bachelor of Science in Nursing (Post RN) programme from 17 January 2008 till 19 January 2013. Joint Transcripts of BU- SCN

for subject programme were issued to the graduates of SCN as per HEC requirement, to cover the examinations of both HEIs. Currently, title of the programme on issued Degree is mentioned as "**Bachelor of Science in Nursing (Post RN)**"; whereas on the transcripts the title is written as "**(Post RN) BSc Nursing**". This contradiction in titles of Degree and Transcript has been objected to by the HEC. Consequently, graduates of the programme are facing difficulty in getting their academic documents attested by the HEC. The SCN has approached BU for amendment in Joint Transcript title as per HEC requirement. Proposed amendment in the title of Transcript for "BSc Nursing (Post RN)" to match with degree program title was processed on OAS case file (BU-HO/Exams/2021/099 dated 18 Mar 2021), which has been approved by the Competent Authority as placed at **Appendage 4027**, subject to ratification by the Academic Council prior its implementation. During this process, a few anomalies in related GPA system have also been resolved through SCN, along with depiction of grading scheme as per HEC/ BU Policy guidelines. Revised transcript approved will be printed at BUHO and issued to the graduates of SCN on payment of Rs. 500 each.

194. Revised Joint Transcript for SCN graduates placed at Appendage 4029 may be ratified by the Academic Council, for adoption and issuance by BU.

Discussion

195. Format of proposed revised Transcript was presented to the Council. It was noted that existing format already contained the inscription Revised due it being already a review of the earlier format with consent of the SCN and the HEC. It was agreed that the new revision would have the inscription Revision-II to distinguish it from the previous revised format.

Decision 4029

196. Revised Joint Transcript for SCN graduates placed at **Appendage 4029** (page 218) was approved by the Academic Council for adoption, with inscription Revision-II. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	CE	CE
Statutory Documents Affected:	Nil	

Item 4030: Amendments in Annual & Semester Based HS Programs - Final Transcripts

Sponsor: Controller of Examinations

Referral Authority: Case File

Summary of the Case

197. A quality check of the Final and Interim Transcripts of Annual and Semester based HS Programmes was carried out by the Exams Dte for uniformity and removal of errors. A case file (BU-HO/Exams/2021/136) in this regard was processed and valuable comments of Dean HS, DQA, DHS and DAA were obtained to improve said transcripts. Most stakeholders were of the view that the transcripts (Annual and Semester based Programmes) should conform to the HEC format as ratified during 30th ACM (Agenda Item 2902). However, these guidelines were further discussed in 32nd ACM (Agenda Item 3238) for standardization of BU transcripts as per HEC guidelines. The same was also factored in while proposing amendments in both types of transcripts – Annual and Semester based. Above in view, following improvements have been proposed in amended formats of transcripts for HS programmes:

- a. Correcting minor typo/ syntax errors and re-phrasing of sentences that do not affect the essence/ meaning or fact and formatting/ alignment in already approved format.
- b. A separate transcript for Bachelors programs, as the format (specimen transcript) approved in 32nd ACM was of semester-based Master Programs only; having variance from grading scheme of HS UG Programmes.

c. Transcripts of semester-based and annual programs of Health Sciences aligned with HEC/ BU format already in practice for other programs.

198. Following amended transcripts, placed at **Appendage 4030** with proposed changes approved through case file highlighted for reference, may be ratified by the Academic Council for adoption:

- a. Final Transcript – Annual Programs.
- b. Final Transcript – Semester-based PG Program.
- c. Final Transcript – Semester-based UG Program.

Discussion

199. The Council was presented the amended formats of Final Transcripts for HS programmes, which were consented for adoption.

Decision 4030

200. The Council ratified the amended formats of Final Transcripts for HS Annual, semester-based UG and semester-based PG programmes, as given at **Appendage 4030** (page 221). Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	CE	CE
Statutory Documents Affected:	Nil	

Item 4031: Ratification of BU Admission Policy 2021 Clause 6.2

Sponsor: Director Admissions

Referral Authority: Case File-DA

Summary of the Case

201. It was observed during previous admissions that existing admission formalities/ process for Postgraduate Programs is lengthy and time consuming. Consequently, a number of candidates join other Institutions/ Universities. The case for revision of BU Admission Policy clause 6.2 was processed on case file (BU-HO/Admission/2021/070) and approved by the Competent Authority; revised clause 6.2 attached as **Appendage 4031**. Ratification in BU Admission Policy 2021 clause 6.2 may be accorded by the Academic Council.

Discussion

202. The Council was presented the amended clause 6.2 of BU Admission Policy, which comprised of more detailed processing in form of Initial Merit Lists prepared by the Admissions Dte (BUHO) for use by concerned HODs, formulation of the Admissions Committee at CU level, preparation of Provisional Merit Lists by respective HODs for Rector's approval through Admissions Dte and promulgation of Final Merit Lists after the Rector approval. The Chair observed that the proposed amendments appeared to complicate the process, and advised to retain the original contents of BU Admissions Policy clause 6.2, while inserting only those actions which were actually being complied but not contained in the Policy. After further discussion, revised amendment of BU Admissions Policy clause 6.2 was approved by the Council as given at **Appendage 4031**.

Decision 4031

203. Revised amendment of BU Admission Policy clause 6.2 is approved by the Academic Council as given at **Appendage 4031** (page 227). Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	DA, DPGP	DA
Statutory Documents Affected: Amendment in BU Admission Policy and MS/ MPhil Rules 2017		

Item 4032: Ratification of One-Time Waiver of 50% Marks in English Subject for Admission in *BS in English*

Sponsor: Director Admissions

Referral Authority: Case File-DA

Summary of the Case

204. BUKC requested for one-time waiver of 50% marks in English subject for admission in *BS in English* programme during Fall 2021 semester only. In light of related Government Policy, final Intermediate/ HSSC exam will be conducted for elective subjects only as compulsory subjects including English have been exempted from said exams. As per BU eligibility criteria for *BS in English* program, the candidates must have obtained overall 50% marks in HSSC and 50% marks particularly in English subject. Consequently, a case was processed on file (BU-HO/Admission/2021/072), approved by the honourable Rector with the condition that the candidates of *BS in English* Program for Fall 2021 semester must have at least 50% marks in English subject in SSC/ O-Level exam for being eligible for admission in *BS in English* program. Ratification of one-time Waiver of 50% marks in English subject for admission in *BS in English* may be accorded by the Council.

Discussion

205. After brief discussion, the Council ratified the one-time waiver of 50% marks in English as proposed.

Decision 4032

206. The Council ratified the one-time waiver of 50% marks in English for admission in the programme *Bachelor of Science in English* for Intakes of Fall 2021 semester only. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Principal BH3S-IC, DA	DA
Statutory Documents Affected:		Nil

Item 4033: Ratification of One-Time Approval for submission of IBCC Certificate and Compulsory subjects for Spring 2021 Semester

Sponsor: Director Admissions

Referral Authority: Case File-DA

Summary of the Case

207. As per HEC Covid-19 Guidance No. 6b, O & A level candidates were given 1-year waiver in submission of IBCC Equivalence certificate and prior qualification in compulsory subjects for the academic year 2020-21. The case was processed on file (BU-HO/Admission/2021/050) for said waivers; duly approved by the honourable Rector for admissions in Spring 2021 Semester subject to ratification by the Academic Council. Ratification of one-time approval for submission of IBCC Certificate and compulsory subjects for Spring 2021 Semester may be accorded by the Council.

Discussion

208. After brief discussion, the Council ratified the one-time approval as proposed and approved on the case file.

Decision 4033

209. The Council ratified the approval for 1-year waiver of submission of IBCC Equivalence Certificate and prior qualification in the compulsory subjects for the Intakes of Spring 2021 Semester only. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	All Principals, Dir BULC	DA
Statutory Documents Affected:	Nil	

Item 4034: Ratification of Weightage Criteria/ Formula for all PG Programmes

Sponsor: Director Admissions

Referral Authority: Case File-DA

Summary of the Case

210. The final Merit List for admissions in PG programs is prepared on the basis of weightage of CBT/ GAT test, UG/ Bachelor result (16-year qualification) and interview marks. Deans/ Principals during various meetings/ forums have suggested the revision of weightage criteria for interviews of the candidates. The case was processed on file (BU-HO/Admission/2021/070) and the honorable Rector has approved the weightage criteria of PG Programs as follows:

- a. BU Admission Test/ ETS Score - 35%
- b. UG/ Bachelor result - 35%
- c. Interview at BU - 30%

211. Ratification of Weightage Criteria/ Formula for all PG Programs may be accorded by the Council, as presented.

Discussion

212. After brief discussion, the Council ratified the weightage criteria for all PG programmes as presented.

Decision 4034

213. The Council ratified the weightage criteria of PG Programs as follows:

- a. BU Admission Test/ ETS Score – 35%
- b. UG/ Bachelor Result – 35%
- c. Interview at BU – 30%

214. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	DA, DPGP	DA
Statutory Documents affected:	Amendment in BU Admission Policy and MS/ MPhil Rules 2017	

Item 4035: Ratification of One-Time Approval of Weightage Criteria/ Formula for all UG Programs (Fall 2021 Semester Only)

Sponsor: Director Admissions

Referral Authority: Case File-DA

Summary of the Case

215. Due to country wide Covid-19 pandemic situation, final exams of HSSC Part-I were not held during 2020 and students were promoted in HSSC Part-II without the final exams. The Govt decided that HSSC Part-II would be held in 2021 and the marks obtained in HSSC Part-II would also be considered as the result of HSSC Part-I. In light of related HEC decision and non-availability of HSSC/ A-Level results of the candidates, Provisional admissions will primarily be granted on the basis of Matric/ O-Level result. The weightage criteria/ formula for preparation of merit lists of UG programs will be: SSC/ O-Level – 30%; CBT/ Equivalent – 70%. The case was processed on file (BU-HO/Admission/2021/ 072) and the honourable Rector has approved the following weightage criteria for all UG Programs in Fall 2021 Semester only:

- a. BU Admission Test/ ETS Score – 70%
- b. SSC/ O Level – 30%

216. Ratification of one-time approval of Weightage Criteria/ Formula for all UG Programs may be accorded by the Council, as presented.

Discussion

217. After brief discussion, the Council ratified the weightage criteria for all PG programmes as presented.

Decision 4035

218. The Council ratified the weightage criteria for all UG Programs for Fall 2021 Intakes only, as follows:

- a. BU Admission Test/ ETS Score – 70%
- b. SSC/ O Level – 30%

219. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	DA	DA
Statutory Documents Affected:	Nil	

Item 4036: Ratification of Charge of Fee after 3 Years from PhD Scholars

Sponsor: Director PGP

Referral Authority: HERC

Summary of the Case

220. The case for ratification of amendment in PhD fee structure was tabled in 36th ACM held on 1-3 December 2020. After due deliberation, ACM approved the following fee to be charged from PhD scholars after the completion of minimum PhD duration at BU:

Year in PhD Program	Recommended Extension Fee Per Semester
4 th	Rs.20000/-
5 th	Rs.25000/-
6 th	Rs.30000/-
7 th onward (in case time-bar waiver is granted)	Rs.40000/-

221. As per Decision 2705 of 28th HERC, the fee structure after minimum duration will be implemented across all PhD Scholars of BU (current and prospective) w.e.f Fall 2021 and the same is to be ratified in the next ACM.

Discussion

222. The HERC decision was presented for ratification by the Academic Council.

Decision 4036

223. The Council ratified the fee structure for PhD scholars after minimum duration, as tabulated in para 221 above. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	All Principals, Dir BULC, DIT	Treasurer
Statutory Documents Affected:	Updating of BU website	

Item 4037: Ratification of Amendments in BU Academic Rules for Course Load of Faculty Members

Sponsor: Director Academics

Referral Authority: Case File-DAcad

Summary of the Case

224. BU faculty members are obliged to work as per the course loads contained in BU Academic Rules Chapter 3 (clause 3.19). Due various observations on prescribed teaching workload in these Rules, a Committee was constituted in February 2021 which proposed amendment of faculty course loads and related sub-clauses. Said amendments were given due consideration and approved by the honourable Rector in June 2021 for incorporation in BU Academic Rules 2016, subject to ratification by the Academic Council.

225. Following amendments in BUAR Chapter 3 are hereby submitted to the Council for ratification and subsequent adoption after concurrence by the Executive Committee:

- a. Replace Table 3 (Faculty Course Load) as amended, to include designation-based course load for non-Engineering Sciences courses.
- b. Add new sub-clause 3.19.2, for the procedure to allocate specific course load to a faculty member.
- c. Replace existing sub-clause 3.19.2 as amended sub-clause 3.19.3.
- d. Add new sub-clause 3.19.4 for minimum course load requirement.
- e. Re-number existing sub-clause 3.19.3 & 3.19.4 as 3.19.5 & 3.19.6 respectively, due insertion of new/ above stated sub-clause.

Discussion

226. The Council reviewed the amendments as presented by DAcad. Proposed Table 3 (Faculty Course Load) was reviewed for merging of **Management Sciences Subjects** and **All Other Subjects** while keeping the same course load for all categories (including 3-4 courses/ 9-12 credit hours for Assistant Professor). Criteria for inclusion of new cases was also included, while the rest of the amendments were consented for implementation w.e.f Spring 2022 semester.

Decision 4037

227. The Council ratified the revised amendments in BUAR as contained in **Appendage 4037** (page 228), including the changes in Table 3 (Faculty Course Load) and criteria for inclusion of new cases; for implementation from Spring 2022 semester. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	DAcad, Registrar	DAcad
Statutory Documents Affected: Updating of BU Academic Rules 2016 after EC concurrence		

Item 4038: Ratification of Amendments in BU HR Policy (Chapter IX - Workload Policy) for Course Load Reduction of Faculty Members

Sponsor: Director HR

Referral Authority: Case File-DAcad

Summary of the Case

228. Workload Policy for BU faculty members is contained in BU HR Policy Chapter-IX, which includes the guidelines for teaching load against internal work load; clause 0908 being relevant. Due increased applications for course load reduction from faculty members involved in performing admin duties in addition to prescribed teaching workload, a Committee was constituted at BUHO in February 2021 which proposed amendment of related BU HR Policy/ Workload Policy. These

recommendations were given due consideration and approved by the honourable Rector in June 2021 for incorporation in BU HR Policy, subject to ratification by the Academic Council.

229. Following amendments in BU HR Policy are hereby submitted to the Council for ratification and subsequent adoption after concurrence by the Executive Committee:

- a. Replace existing clause 0908 with amended clause 0908 in Chapter-IX (Workload Policy).
- b. Add Annex S in BU HR Policy (**Criteria for Course Load Reduction to Faculty Admin Assignments**).

Discussion

230. The Council reviewed the amended clause and proposed Annex S. Following additions were incorporated for ratification:

- a. Associate Dean and criteria for related course load reduction included.
- b. Minimum course load for Dean, Associate Dean and principal included.

Decision 4038

231. The Council ratified the amended clause 0908 of BUHR Policy Chapter-IX (Workload Policy) and addition of Annex S in BUHR Policy as finalized at **Appendage 4038** (page 230); for implementation from Spring 2022 semester. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	DHR, Registrar	DHR
Statutory Documents Affected: Updating of BUHR Policy after EC concurrence		

Item 4039: Ratification of SOP for Students' Exchange with University of Almeria, Spain

Sponsor: Director IO

Referral Authority: Case File

Summary of the Case

232. In line with the Strategic Plan of Bahria University, a new agreement for exchange of students has been signed with University of Almeria (UoA), Spain. According to the MoU, Bahria University can send up to 3 students per annum on exchange basis to the UoA. No tuition fee is to be paid by the BU student to the UoA. The students will only have to bear their travel, living & miscellaneous expenses in Spain. Bahria University already has similar agreements with 5 x Turkish, 1 x Chinese, 1 x U.S, 1 x British, 1 x Italian and 1 x Malaysian university; with the SOPs for selection and credit transfer process approved by the ACM. Keeping in view the practice followed for other foreign universities, an SOP was prepared on the similar lines; defining the students' selection and credit transfer mechanism under the exchange programme. The SOP (as given at **Appendage 4039**) (page 232) has been approved by the Competent Authority on case file and needs to be ratified by the Academic Council.

233. It is recommended that the SOP prepared for the exchange of students with University of Almeria, Spain, approved by the Competent Authority on related case file may be ratified for implementation by the Academic Council.

Discussion

234. DIO presented the SOP for review, which was ratified by the Council after a brief discussion.

Decision 4039

235. The Council ratified the SOP for the exchange of BU students with the University of Almeria, Spain placed at **Appendage 4039** (page 232), as approved by the Competent Authority on related case file. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	DIO	DIO
Statutory Documents affected:	Nil	

Closing the Meeting

236. The Secretary drew the attention of the House to the following timelines for follow-up actions and the next ACM:

- a. 1st Progress Report on Action Items of 40th ACM – 05 January 2022
- b. 2nd Progress Report on Action Items of 40th ACM – 07 March 2022
- c. Agenda Items for 41st ACM
(including points from respective FBOS) – 07 March 2022
- d. Scheduled dates of 41st ACM – 05 & 06 April 2022

237. In his closing remarks, the Chair thanked the participants for active participation throughout the 3 days of the Meeting.

238. There being no further point, the meeting was adjourned.

ASIM RAZA SI(M)
Commodore (Retd)
Director Academics
Secy Academic Council

Dated: 2 November 2021

Revised Appendix 3803**REVISED ROADMAP - MPHIL PATHOLOGY PROGRAM****Semester – 1**

S No	Course Code	Course Title	Credit Hours	Theory	Practical
1	MED 701	Research Methodology	3+0	3	0
2	MED 712	Medical Biology & Genetics	2+0	2	0
3	MED 713	Medical Education, Ethics & Writing	2+0	2	0
4	MED 714	Instruments & Animal use in research	2 (1+1)	1	1
5	MED 715	Journal Club-I	No Credit Hour	0	0
6	MED 718	Teaching Internship-I	No Credit Hour	0	0
Total Credit Hours in Semester-1			9	8	1

Semester – 2

S No	Course Code	Course Title	Credit Hours	Theory	Practical
1	PAT 740	General Pathology & Basic Microbiology	3 (2+1)	2	1
2	PAT 750	Special Pathology*	3 (2+1)	2	1
	PAT 751	Microbiology & Mycology**	3 (2+1)	2	1
3	XXX XXX	Elective-I	3 (1+2)	1	2
4	MED 716	Journal Club-II	No Credit Hour	0	0
5	MED 719	Teaching Internship-II	No Credit Hour	0	0
Total Credit Hours in Semester-2			9	5	4

* for Histopathology

** for Microbiology

Semester – 3 Semester – 1 & Semester – 2 are Pre-requisite to proceed to

S No	Course Code	Course Title	Credit Hours	Theory	Practical
1	XXX XXX	Elective-II	3 (1+2)	1	2
2	XXX XXX	Elective-III	3 (1+2)	1	2
3	THS 700	Thesis-I	3+0	3	0
4	MED 717	Journal Club-III	No Credit Hour	0	0
5	MED 720	Teaching Internship-III	No Credit Hour	0	0
Total Credit Hours in Semester-3			9	5	4

Semester – 4

S No	Pre-requisite Course Code	Course Code	Course Title	Credit Hours	Theory	Practical
1	THS 700	THS 701	Thesis-II	3+0	3	0
Total Credit Hours in Semester-4				3	3	0

ELECTIVE LIST			
S No	Course Code	Course Title	Credit Hours
1	PAT 742	Tissue Processing for Histopathology	3(1+2)
2	PAT 743	Histopathology Laboratory Procedures & Reporting	3(1+2)
3.	PAT 744	Endocrine & Renal disorders	3(1+2)
4	PAT 745	Molecular Pathology Laboratory - Related to Tissue Pathology	3(1+2)
5	PAT 746	Microbiology Laboratory - Procedures & Reporting	3(1+2)
6	PAT 747	Molecular Pathology Laboratory- Related to Infectious Diseases	3(1+2)
7	PAT 748	Virology	3(1+2)
8	PAT 749	Parasitology	3(1+2)

CORE COURSES			
Sr.No	Course Code	Course Title	Credit Hours
1	MED 712	Medical Biology & Genetics	2
2	MED 713	Medical Education, Ethics & Writing	2
3	MED 714	Instruments & Animal use in Research	2
4	PAT 740	General Pathology & Basic Microbiology	3
5	PAT 750	Special Pathology*	3
6	PAT 751	Microbiology & Mycology**	3
6	THS 700	Thesis-I	3
7	THS 701	Thesis-II	3
8	MED 715	Journal Club-I	No credit hour
9	MED 716	Journal Club-II	No credit hour
8	MED 717	Journal Club-III	No credit hour
9	MED 718	Teaching Internship-I	No credit hour
10	MED 719	Teaching Internship-II	No credit hour
11	MED 720	Teaching Internship-III	No credit hour

*for Histopathology

**for Microbiology

UNIVERSITY REQUIREMENT			
Sr.No.	Course Code	Course Title	Credit Hours
1	MED 701	Research Methodology	3

Appendage 40(3601)

Bahria University, Islamabad
Department of Humanities & Social Sciences
Faculty Name: Saira Nawaz Abbasi
COURSE OUTLINE

Course Name	Blue Economy of Pakistan	Prepared in	Summer 2021
Course Code	MTM 673		
Credit Hours	3	Revised on	As per Requirement
Course Prerequisite			
Prerequisite Code			
Course Type	<input type="checkbox"/> Elective Course		
Program	<input type="checkbox"/> BSS		
Semester			

Course Description

Blue economy is an emerging popular concept which revolves around safeguarding the world's oceans and efficiently using of water resources for sustainable growth and development. The concept at its core refers to promote usage of ocean resources for economic growth, social inclusion, and the preservation of livelihoods while at the same time ensuring environmental sustainability of the oceans and coastal areas. Pakistan has 1,047 kilometers coastal area and 290,058 square kilometer of the sea water in the Indian Ocean region. This provides Pakistan an opportunity to explore the potential benefit from the blue economy. Blue economy encompasses many activities such as renewable energy, fisheries, maritime transport, shipping, ports, seafaring, fishing, aquaculture, shipbreaking and coastal tourism. Currently, the blue economy of Pakistan is operating less than the potential level. Effective policies could uplift this sector and might result in increased economic growth. This course will give an overview of Pakistan's maritime potential as well as the challenges and prospects.

Course Learning Outcomes

CLO #	Description
1.	Students will be able to understand the significance of blue economy and sustainable growth.
2.	Clear understanding of the Pakistan's maritime potential.
3.	To analyse the challenges and prospects for Pakistan in the maritime sector.

Main Text Books

- *The Blue Economy: 10 Years, 100 Innovations, 100 Million Jobs*, Gunter A. Pauli, Paradigm Publications, Mexico
- *Preparing a Workforce for the New Blue Economy: People, Products and Policies*, Liesl Hotaling, Richard W. Spinrad Elsevier Science, 27-May-2021
- *The Blue Economy Handbook of the Indian Ocean Region*, Attri, V.N., Bohler-Mulleris, Narnia, South Africa

Teaching & Learning Methodology

- Reading material
- Class discussions
- Debate/documentary/video clips etc
- Critical analysis of given topics
- Policy paper/position paper

Grading Policy		
	Assessment Instruments	Percentage
	Quizzes	15%
	Assignments	20%
	Mid Term Exam	25%
	Final Exam	40%

Week-wise Course Outline

Week / Session	Contents	Activities / Learning Outcome / Readings
1.	Blue Growth: An Emerging Paradigm of National Power Sub-topics <ul style="list-style-type: none">- Transforming the concept of sea power- Ocean as component of National Power- Blue economy as an emerging global trend	Traditionally, the concept of Sea power gravitated around strengthening of Navies and developing military strategies to project influence at sea and protect maritime sovereignty of the state. However, globalization has brought into limelight, the strategic significance of maritime economy including shipping, coastal tourism, strategic ports and choke points, off shore energy reserves; and led to rise of littorals nations as important regional and global players.
2	<ul style="list-style-type: none">- Blue economy & sustainable development goals- Prospects of blue growth for Pakistan	Blue economy has also been cited as the Ocean's Agenda and gained concurrence through the United Nations Conference on Sustainable Development.
3	Pakistan's Coastal Areas Sub-topics <ul style="list-style-type: none">- Coastal Zone of Pakistan- Sindh Coast- Baluchistan Coast	Students will be able to learn about the potential of the coastal areas of Pakistan and its resources.
4	Sea Ports in Pakistan Sub-topics <ul style="list-style-type: none">- Karachi Port- Port Qasim- Gawadar Port- Ormara + Jiwani + Manora + Pasni strategic one	Comparative analysis of the Pakistan's port and other regional ports.
5	Important Features of Pakistan's Coast Subtopics <ul style="list-style-type: none">- Indus Delta (Impacts)- Sir Creek Dispute- Rann of Kutch- Coastal & Marine Islands	Detailed analysis and debate on the features of the coastal areas of Pakistan.
6	Pakistan's Exclusive Economic Zone (EEZ) & Continental Shelf	Exclusive Economic Zone (EEZ) is known to be a sea zone appointed by the UNCLOS. Because of the EEZ, countries own special right and sovereignty over their blue resources

7	Debate on a selected topic	Students will be engaged to indulge in the critical evaluation of various topics.
8	Revision	
9	MID-TERM EXAMS	
10	Transshipping Industry Transit Trade	The Gwadar Port because of its strategic location closer to Persian Gulf, ability to handle deep draught ships, short access channel of only 4.7 km, availability of low-cost labour, sufficient area to stack containers and other cargo, can be equipped to operate as a transhipment port. Gawadar port could play its role for transit trade as it provides a gateway due to its linkage with Belt and Road Initiative.
11	Shipbuilding & Ship Repairs Merchant Fleet	The shipbuilding and repair facilities closer to the ports are important for shippers. However, it has limited facilities to handle bigger ships. It has two dry docks. For a maritime country like Pakistan, the number of its merchant ships is far less as compared to other maritime nations. Indian merchant fleet is among the 20 largest in the world.
12	Fishing Industry Ship Breaking Industry	The preservation of seafood and its preparation for export is important process. In countries like Bangladesh, Pakistan and India the scrapping and ship breaking are a source of jobs. Ship breaking is a major source of steel and iron materials to the growing industry and infrastructure.
13	Alternative Sources of Energy for Pakistan from Ocean	Maritime economy can play a role of major source of clean energy in Pakistan. Where world economy is seeking for clean, renewable and affordable energy supply, the maritime economy is emerging as a large reservoir of such energy.
14	Coastal Tourism and Water Sports Potential	Coastal tourism contributes almost 5% to the global GDP. For Pakistan the coastal tourism contributes \$0.314bn, whereas the potential is almost about \$4bn. Water sports is also known all round the world. The estimated potential for Pakistan is \$1bn.
15	Aqua Culture Subtopics - Feasible Strategies for Aquaculture	Also known as aqua fishing or farming of fishing on both seashores and inland areas.
16	Class Wrap up	
17	Revision	
18	FINAL EXAMS	

Important Note: This course outline is a working outline for our semester. It is your responsibility to read everything stated in this document and meet all the requirements in order to complete the course successfully. If you do not read the whole course outline and meet the requirement entailed therein, you will take the responsibility for any penalty, e. g., fail grade misunderstanding, misinformation, or anything that may impact your grade.

Course Name	Geopolitics & Maritime Security in Indian Ocean	Prepared in	Summer 2021			
Course Code	MTM 674					
Credit Hours	3					
Course Prerequisite						
Prerequisite Code		Revised on				
Course Type	<input type="checkbox"/> Elective Course		As per Requirement			
Program	<input type="checkbox"/> BSS					
Semester						
Course Description						
<p>The Indian Ocean Region (IOR) is significant area of contemporary international politics due the fact that political and security dynamics in four regions; the Persian Gulf, South Asia, South East Asia and Eastern Africa are linked with the politics of Indian Ocean crafting the interdependencies. The rise of China and an increasing Sino-Indian competition has brought the Indian Ocean back to the geopolitical focus. China's increasing economic and military activities across the Indian Ocean have extended the scope of geopolitical competition even beyond India. The new security architecture of Indian Ocean would be comprised of the United States, UK, France and Australia along with traditional powers of the region. The conventional security challenges have two aspects. Military competition between the major powers, such as the United States, China, India, Russia and Japan, and competitive territorial claims between China and the South East Asian countries in the South China Sea dominate the security calculus in the Indo-Pacific. External powers have also used territories in the Indian Ocean for staging military operations: the use of Diego Garcia by the United States military being a case in point. Moreover, the surreptitious nature of Chinese investments in various port facilities in the IOR – Gwadar in Pakistan and Hambantota in Sri Lanka – have fuelled concerns that they can potentially be used as a naval base like Djibouti, where China formally opened its first overseas base last year. Several non-conventional threats exist too. They include: terrorism, maritime piracy and robbery, trans-national organised crime, contraband smuggling (arms, drugs and wildlife), human trafficking and malicious cyber activities.</p>						
<p>This course will give an overview of cooperation and competition in the IOR, contemporary political and security dynamics with futuristic approach.</p>						
Course Learning Outcomes						
CLO #	Description					
1.	Students will be able to understand the significance of geopolitics.					
2.	Clear understanding of the geopolitics of Indian Ocean and the maritime security in the IOR.					
3.	To comprehend the role of external actors in the IOR.					
Text Books						
<ul style="list-style-type: none"> • <i>Maritime Security in the Indian Ocean and Western Pacific: Heritage and Contemporary Challenges</i>, Howard M. Hensel, Amit Gupta Taylor & Francis Limited, 30-Jun-2021 						
Teaching & Learning Methodology						
<ul style="list-style-type: none"> • Reading material • Class discussions • Debate/documentary/video clips etc • Critical analysis of given topics • Policy paper/position paper 						

Grading Policy		
	Assessment Instruments	Percentage
	Quizzes	15%
	Assignments	20%
	Mid Term Exam	25%
	Final Exam	40%
Week-wise Course Outline		
Week / Session	Contents	Activities / Learning Outcome/Readings
1	Geography & Resources of Indian Ocean Region (IOR) <p>Sub-topics</p> <ul style="list-style-type: none"> - Maritime chokepoints and their politico-economic/strategic significance - Straits of Malacca 	Geopolitics, geography plays a vital role in influencing peace and security in the region. The Indian Ocean is the third largest Ocean having an area of 68.56 million sq km and covers about 20% of the earth's surface.
2	<ul style="list-style-type: none"> - Strait of Hormuz - Bab-el-Mandeb Strait - Sunda and Lombok Strait 	Moreover; the relevance of IOR in the contemporary international political and economic relations.
3	Understanding Geopolitics in IOR <p>Sub-topics</p> <ul style="list-style-type: none"> - Sea-politics - Sea Lines of Communications (SLOCs) 	The presence of the big powers in the region and resultant competition creates a situation of security dilemma for the smaller states of the region.
4	<ul style="list-style-type: none"> - String of Pearl Theory - Belt and Road Initiative of China 	Expansion of activities in the region and its impact in the absence of a comprehensive multilateral agreement of Maritime Security.
5	<ul style="list-style-type: none"> - Significance of Gwadar Port - Significance of Chahbahar 	Geopolitical importance of the ports
6	Major Powers in the IOR <p>Subtopics</p> <ul style="list-style-type: none"> - China, France, US, and UK 	The presence of the big powers in the region and resultant competition creates a situation of security dilemma for the smaller states of the region. Evolving roles, missions and capabilities of the states.
7	Climate Change and Natural Disasters <p>Subtopics</p> <ul style="list-style-type: none"> - Changing Weather Patterns 	

	8	- effect of sea-level rise Water Governance	
	9	MID-TERM EXAMS	
	10	Littoral Powers of the IOR Sub-topics Pakistan, Iran, India, Australia, UAE and KSA	Expansion of activities in the region and its impact in the absence of a comprehensive multilateral agreement of Maritime Security.
	11	Security Challenges in the IOR Sub-topics - Piracy, - Human Trafficking	Due to the its significance, the region is confronted with many challenges which requires proper governance to handle such issues.
	12	- Drug trafficking - Maritime Terrorism	Unattended region and lack of political commitment would lead to serious repercussion for the regional states.
	13	Countering Piracy, Trafficking and Terrorism Subtopics - Key evolving security trends - Regional cooperation	Multiple sources of insecurity afflict many of the countries that rim the Indian Ocean. These challenges include simmering conflicts between Persian Gulf states; terrorism in Pakistan, Sri Lanka, India, and Saudi Arabia; insurgency in Yemen and Iraq; state failure, civil war, and famine in Somalia; high-volume trafficking of drugs from Afghanistan via Pakistan and Iran; and piracy and armed robbery at sea.
	14	International Law and Order Sub-topics: - Maritime Boundaries - International Fishing Agreements	The diversity of interests of nations bordering this region can lead to conflict. International law, particularly the 1982 UN Convention on the Law of the Sea, plays a pivotal role in peacefully resolving such conflicts. Yet while legal measures and policy initiatives have helped mitigate international tensions through diplomatic processes, political, economic, and environmental issues can still lead to disputes and conflict.
	15	- Maritime Safety and Security Agreements - Regional Consultative Bodies.	There are several regional organizations that are not actual law making bodies, yet have significant policy roles in the Indian Ocean.
	16	Class Wrap up	
	17	Revision	
	18	FINAL EXAMS	

Important Note: This course outline is a working outline for our semester. It is your responsibility to read everything stated in this document and meet all the requirements in order to complete the course successfully. If you do not read the whole course outline and meet the requirement entailed therein, you will take the responsibility for any penalty, e. g., fail grade misunderstanding, misinformation, or anything that may impact your grade.

Course Name	Maritime Culture and Tourism	Prepared on			
Course Code	MTM 340				
Credit Hours	3				
Course Prerequisite	None				
Prerequisite Code	-	Revised on			
Course Type	<input type="checkbox"/> Elective Course				
Program	<input type="checkbox"/> BSS				
Semester					
Course Description					
<p>This course will focus on maritime history, culture, and tourism. Taking an interdisciplinary approach, this course will allow students to explore socioeconomic, cultural, political, demographic, and historical aspects of maritime landscapes during the colonial and post-colonial time periods as well as in the contemporary age. This course will also focus on the maritime policy in terms of trade, commerce, and tourism and their impact on maritime cultures. This course will explore the history of ocean exploration, the construction of cultures, and the sociological perspectives on social, cultural, economic impacts of industry and tourism in coastal and marine spaces.</p>					
Course Learning Outcomes					
<p>This course aims to achieve the following learning outcomes:</p> <ul style="list-style-type: none"> • To understand the sociological & anthropological perspective on maritime culture and maritime tourism. • To evaluate the history of sea exploration, cultural change, and the impact of technology, industry, and tourism on coastal areas. • To analyze the socio-cultural history of maritime artifacts and folklore. 					
Teaching & Learning Methodology					
<p>Critical & Heuristic Pedagogical approach will be adopted</p>					
Textbooks and References					
<ul style="list-style-type: none"> • MFF Pakistan (2016). A Handbook on Pakistan's Coastal and Marine Resources. MFF Pakistan, Pakistan. • Orams, M. (1999). Marine Tourism: Development, impacts and management. London and New York: Routledge. • Garrod, B., & Gossling, S. (Eds.). (2008). New Frontiers in Marine Tourism. New Frontiers in Marine Tourism. Oxford: Elsevier. • Orams, M., & Lück, M. (2012). Marine systems and tourism. In A. Holden & D. Fennell (A C. Di), <i>The Routledge Handbook of Tourism and the Environment</i> (pagg. 170–182). London and New York: Routledge. 					

Grading Policy			
	Assessment Instruments	Percentage	
	Quizzes	15%	
	Assignments	20%	
	Mid Term Exam	25%	
	Final Exam	40%	
Week-wise Course Outline			
Week / Session	Contents	Activities / Learning Outcome	
1.	Introduction	(The overall introduction of the course of maritime culture & tourism) Activity: Lecture and class discussion	
2	Maritime culture: the sociological perspective	(Analyzing the maritime cultural landscape with the lens of different sociological perspective i.e. Structural Functionalism, Marxist Perspective and Symbolic Interactionism) Activity: Lecture, class discussion, and review of the assigned reading	
3	Tourism and maritime history	(Students will be taught about different eras of maritime tourism) Activity: Lecture, short videos, and class discussion	
4	Sea exploration, imperialism, and trade	(Merchant capitalism, search of raw material, the start of exploitative trade) Activity: Lecture, short videos, and class discussion	
5	Marine cultural heritage (MCH)	(The purpose of MCH is to make students enlighten about Social and Cultural context of marine heritage) Activity: Lecture, short videos, and class discussion	
6	Maritime cultural tourism Maritime heritage tourism	(Cultural structure of marine inhabitants, their lifestyle and needs) Activity: Lecture, short videos, review of the assigned reading and class discussion	
7	Social and economic benefits of marine and maritime cultural heritage	(Economic opportunities, local and global context) Activity: Lecture, short videos, and class discussion	
8	Marine cultural heritage and sustainable development agenda	(SDGs and maritime affairs-sociological agenda including Ecotourism) Activity:	

		Lecture, short videos, and class discussion
9	MID-TERM EXAMS	
10	Coastal zone of Pakistan Important features of Pakistan's coast	(<i>The Socio-cultural, geo-political and strategic importance of Pakistan's coastal line</i>) Activity: Lecture, short videos, and class discussion
11	Marine tourist destinations and main trends	(<i>Main coastal tourist destinations-Gwadar, Karachi</i>) Activity: Lecture, short videos, and class discussion Quiz:
12	Cultural geographies of marine tourist destinations	(<i>Rich cultures of marine areas-Sociological overview</i>) Activity: Lecture, short videos, and class discussion
13	Sustainable tourism and blue economy	(<i>Role and importance of blue economy in building Pakistan</i>) Activity: Lecture, short videos, and class discussion
14	Maritime archeology Underwater cultural heritage	(<i>Archeological structure of Maritime life-An Anthropological Glimpse</i>) Activity: Lecture, short videos, and class discussion
15	Concluding maritime literature on the culture, history, and aesthetics of sea	(<i>The Role of sea, blue economy & Port-Socio-Cultural perspective</i>) Activity: Lecture, short videos, and class discussion
16	Final presentations	Class presentations
17	FINAL EXAMS	

Note:-

- Student's preparations for case studies and participation in discussions can be selectively taken as their assignments for grading or instructor may develop separate mechanism.
- Class activities would predominantly include discussions, presentations by student groups and case studies.

Course Name	Maritime Anthropology	Prepared on			
Course Code	MTM 331				
Credit Hours	3				
Course Prerequisite	None				
Prerequisite Code	-	Revised on			
Course Type	<input type="checkbox"/> Elective Course				
Program	<input type="checkbox"/> BSS				
Semester					
Course Description					
<p>This course will provide an anthropological perspective on maritime studies. As a sub-discipline of anthropology, maritime anthropology focuses on ethnographic study of maritime societies and cultures. This course will provide an opportunity for students to read classic ethnographies written by early anthropologists who have worked on maritime anthropology. In addition to classic maritime anthropological literature, this course will explore social and cultural dimensions of coastal and marine spaces with a focus on historical and contemporary human cultures. Maritime anthropology focuses on the intimate relationship of oceans/sea with our everyday life. Coastal areas, marine spaces, oceanographies have become central in the contemporary discourses because of the emerging issues of climate change, globalization, and politico-economic transitions in the contemporary times. This course will allow students to get an insight into maritime studies through an anthropological lens. Students will cover a range of conceptual, thematic and methodological currents within the following sub-disciplines: classical maritime anthropology, maritime history, comparative literature, cultural and feminist geographies, critical oceanic studies, decolonial thinking, and political ecology.</p>					
Course Learning Outcomes					
<p>This course aims to achieve the following learning outcomes:</p> <ul style="list-style-type: none"> • To understand maritime anthropology as a sub-discipline of anthropology and the role of anthropology to understand historical and contemporary maritime cultures. • To analyze human-marine interrelationship using the multispecies ethnography approach in anthropology. • To apply the theoretical knowledge of maritime anthropology and to analyze emerging issues of climate change and socioeconomic transformations. 					
Teaching & Learning Methodology					
Critical & Heuristic Pedagogical approach will be adopted.					
Textbooks and References					
<ul style="list-style-type: none"> • Malinowski's <i>Argonauts of the Western Pacific</i> (1961), Firth's <i>Malay Fishermen</i> (1946), Prins' <i>Sailing from Lamu</i> (1965) • Peters, Kimberley and Anderson, Jon (eds.), (2016). <i>Waterworlds: Human Geographies of the Ocean</i>. London: Routledge. (Introduction) • Ratté, Stephanie (2019). (Un)seen Seas: Technological Mediation, Oceanic Imaginaries, and Future Depths. <i>Environment and Society</i>, 10(1), 141-157. • Mathieson, Charlotte (2016). Sea Narratives: Cultural Responses to the Sea, 1600–Present. Basingstoke: Palgrave Macmillan. • Mentz, S. (2009). Toward a blue cultural studies: The sea, maritime culture, and early modern English literature. <i>Literature Compass</i>, 6(5), 997-1013. • Acheson, J. M. (1981). Anthropology of fishing. <i>Annual review of anthropology</i>, 10(1), 275-316. 					

Grading Policy		
	Assessment Instruments	Percentage
	Quizzes	15%
	Assignments	20%
	Mid Term Exam	25%
	Final Exam	40%

Week-wise Course Outline		
Week / Session	Contents	Activities / Learning Outcome
1.	Introduction	<p>Introduction of Maritime anthropology as a sub-field of anthropology that studies coastal cultures. Students will learn about the evolution of the sub-discipline.</p> <p>Activity:</p> <p>Lecture and class discussion</p>
2	<p>Maritime anthropology</p> <p>Malinowski's <i>Argonauts of the Western Pacific</i> (1961)</p>	<p>Students will learn about the emergence of maritime anthropology and read about some classic ethnographies starting with Malinowski's <i>Argonauts of the Western Pacific</i> (1961).</p> <p>Activity:</p> <p>Lecture, class discussion, and review of the assigned reading</p>
3	Firth's <i>Malay Fishermen</i> (1946)	<p>Students will read and discuss Firth's ethnography on fishermen in Malay.</p> <p>Activity:</p> <p>Lecture, short videos, and class discussion</p>
4	Prins' <i>Sailing from Lamu</i> (1965)	<p>Students will read and discuss Prins' ethnography <i>Sailing from Lamu</i> and understand about maritime culture.</p> <p>Activity:</p> <p>Lecture, short videos, and class discussion</p>
5	Orbach's <i>Hunters, Seamen and Entrepreneurs</i> (1977)	<p>Students will read another ethnography and learn about anthropological methods to study maritime cultures.</p> <p>Activity:</p> <p>Lecture, short videos, and class discussion</p>
6	Fishing cultures of the world	<p>Students will learn about fishing cultures and the multispecies ethnography approach in anthropology.</p> <p>Activity:</p> <p>Lecture, short videos, review of the assigned reading and class discussion</p>
7	Maritime cultures	<p>Students will learn more about maritime cultures and coastal communities.</p> <p>Activity:</p> <p>Lecture, short videos, and class discussion</p>
8	Marine management and living and historical cultures	Students will learn about cultural dimensions of marine management by focusing on traditional knowledge systems of marine management.

		Activity: Lecture, short videos, and class discussion	
9	MID-TERM EXAMS		
10	New directions in maritime and fisheries anthropology (Aswani 2020)	Students will learn about new theoretical and research directions in maritime anthropology since 1990s in the context of global socioeconomic transformations and climate change. Activity: Lecture, short videos, and class discussion	
11	Socioeconomic and environmental changes in marine spaces	Students will learn about perspectives on marine and coastal transformations against the backdrop of socio-environmental risk. Activity: Lecture, short videos, and class discussion	
12	Maritime anthropology: climate change	Students will learn about maritime anthropology approaches to study climate change and its effects on coastal communities and beyond. Activity: Lecture, short videos, and class discussion	
13	Maritime anthropology: social justice	Students will learn about literature in maritime anthropology that focuses on social justice and postcolonial and decolonial thinking. Activity: Lecture, short videos, and class discussion	
14	Rural and marine communities	Students will learn about the comparative literature in maritime anthropology, coastal transformations and future ahead. Activity: Lecture, short videos, and class discussion	
15	Seafood marketing: multispecies approaches	Students will learn about the 'multispecies turn' in anthropology. Activity: Lecture, short videos, and class discussion	
16	Final presentations	Class presentations	
18	FINAL EXAMS		

Note:-

- Student's preparations for case studies and participation in discussions can be selectively taken as their assignments for grading or instructor may develop separate mechanism.
- Class activities would predominantly include discussions, presentations by student groups and case studies.

Course Name	Maritime Governance and Sustainability through Blue Economy	Prepared on	Summer 2021					
Course Code	MTM 672							
Credit Hours	3							
Course Prerequisite								
Prerequisite Code		Revised on						
Course Type	<input type="checkbox"/>							
Program	<input type="checkbox"/>							
Semester								
Course Description								
<p>The course is designed to respond directly to the real needs of the maritime industry, and to equip graduates with the skills needed today and in the future. It is academically challenging and professionally oriented, and is designed for ambitious, mid-career maritime professionals. It provides a particularly strong foundation for those intending to move into either a national or an international career. It is academically challenging and professionally oriented and is designed for ambitious and prospective maritime professionals. It provides a particularly strong foundation for those intending to move into either a national or an international career.</p> <p>Students gain a sound understanding of ecosystem-based management, international law of the sea and ocean governance structures, also including ocean-related UN institutions and systems. Key goals for sustainable ocean governance and responsible ocean business practice are also explored. The specialization is designed to deliver the knowledge required to incorporate the United Nations 2030 Agenda for Sustainable Development into the domestic ocean governance policies of graduates' home countries and seeks to develop the transdisciplinary skills necessary for the fulfilment of the responsibilities graduates will assume.</p> <p>Students will explore different marine planning processes and real-world case studies of their application to sustainable marine development. These planning processes aim for the sustainable use and protection of marine resources against socio-political drivers for growth of the blue economy (industries with high potential for socioeconomic growth e.g., fisheries, aquaculture, renewable energy, oil and gas, seabed mining, maritime and coastal tourism, and blue biotechnology).</p>								
Course Learning Outcomes								
CLO #	Description							
1.	Introducing students with the concepts of sustainability in the blue economy							
2.	Exploring models of maritime development across the world to produce scholarship on maritime governance and sustainability in Pakistan							
3.	Equipping students with the necessary theoretical and practical knowledge on maritime governance and sustainability							
Teaching & Learning Methodology								
<p>Students will learn about ocean processes, ecosystem functions and marine resources, and how society depends on, interacts with and impacts the health and sustainability of the ocean and coasts. Students through interactive lectures and professional expertise of the instructors can gain a sound understanding of ecosystem based management, international law of the sea and ocean governance structures, including also ocean-related UN institutions and systems. Key goals for sustainable ocean governance and responsible ocean business practice will also be explored.</p>								

Text Book and References			
Pauli, G. A. (2010). <i>The blue economy: 10 years, 100 innovations, 100 million jobs</i> . Paradigm publications.			
Smith-Godfrey, S. (2016). Defining the blue economy. <i>Maritime affairs: Journal of the national maritime foundation of India</i> , 12(1), 58-64.			
Silver, J. J., Gray, N. J., Campbell, L. M., Fairbanks, L. W., & Gruby, R. L. (2015). Blue economy and competing discourses in international oceans governance. <i>The Journal of Environment & Development</i> , 24(2), 135-160.			
Yliskylä-Peuralahti, J. (2017). Ecological modernization and the multi-scaled governance of sustainability in maritime transport. <i>Geografiska Annaler: Series B, Human Geography</i> , 99(1), 42-58.			
Monios, J. (2020). Environmental governance in shipping and ports: Sustainability and scale challenges. <i>Maritime transport and regional sustainability</i> , 13-29.			
Videira, N., Lopes, R., Antunes, P., Santos, R., & Casanova, J. L. (2012). Mapping maritime sustainability issues with stakeholder groups. <i>Systems Research and Behavioral Science</i> , 29(6), 596-619.			
Glavovic, B. C. (2008). <i>Ocean and coastal governance for sustainability: Imperatives for integrating ecology and economics</i> (pp. 313-342). Edward Elgar: Cheltenham, UK.			
Grading Policy			
	Assessment Instruments	Percentage	
	Quizzes	15%	
	Assignments	20%	
	Mid Term Exam	25%	
	Final Exam	40%	
Week-wise Course Outline			
week / Session	Contents	Activities / Learning Outcome	
1	Topic: Introduction to Blue Economy	Orientation/Introduction on Blue Economy and its significance.	
2	Topic: Ecosystem based approach to governance	To make the students learn an ecosystem-based approach to the governance and management of the interconnected global ocean and social-ecological systems.	
3	Topic: The sustainability of the ocean and coasts and impact upon health	Different methods and strategies to ensure sustainability.	
4	Topic: International law of the sea and ocean governance structures.	To develop an understanding on the international law of the sea and ocean governance structures.	
5	Topic: Ocean-related UN institutions and systems	The United Nations Convention on the Law of the Sea (UNCLOS) is the fundamental international legal and governance framework will be discussed in detail.	
6	Topic: Key goals for sustainable ocean governance and responsible ocean business practice are also explored.	Ocean governance and its sustainability will be discussed and how business practices can impact them.	

7	Topic: United Nations 2030 Agenda for Sustainable Development into the domestic ocean governance policies	To study the milestones of United Nations 2030 Agenda for Sustainable development and what can be strategy to meet the targets.
8	Topic: Revitalization of coastal economies	Challenges faced by the institutions in the process of revitalization of coastal economies
9	MID-TERM EXAMS	
10	Topic: Provision of alternative livelihoods and improved food security and wellbeing	Students will study the employment opportunities for the population in the coastal areas and an introduction of different ways in which food security and wellbeing can be improved.
11	Topic: Global fishing industry	Students will understand different implications Global fishing industry how unchecked development can lead to human-rights abuses, including enslavement and erosion of local access to fisheries and food security.
12	Topic: Social Equity and Blue Justice	Specific concerns relating to small-scale fisheries (SSFs), Indigenous people, women and youth will be discussed.
13	Topic: Policy making for Ocean Development	The students will be taught that systematic and clear policies and actions are needed as ocean development proliferates and in areas beyond national jurisdiction.
14	Topic: Labour and Human Rights	To develop an understanding regarding recognizing and protecting the tenure and access rights of coastal and Indigenous populations to fisheries and areas of the ocean; ensuring that labour and human rights are respected.
15	Topic: Role of Civil Society in strategy enabling Blue Economy and its sustainability	NGOs are actively advocating for their preferred visions for the blue economy, yet often remain marginalized and side lined in global oceans governance.
16	Guidelines for Blue Growth and initiatives	Guidelines will be studied that require equitable treatment of local populations and sharing of any wealth generated through blue growth.
17	Class Presentations/Revision	
18	FINAL EXAMS	

Course Name	Maritime History of Muslims	Prepared			
Course Code	ISS 521	Spring 2021 For Fall 2021			
Credit Hours	03				
Course Pre Requisite	N/A				
Course Pre Req. Code	N/A				
Course Type	Elective				
Program	MS (Islamic Studies)				
Semester	2021				
Course Objective					
Maritime and Navy constitute major defence institutions whose importance is continuously growing in the current world. Especially considering the respective role of Pakistan in the regional developments such as CPEC and OBOR initiative, it has become imperative to highlight its importance among the future generation, the students of Pakistan in as far as imparting basic relevant education is concerned. It is in this perspective that the course has been outlined.					
Course Description					
The course introduces students the basic concepts of maritime, navy and oceanology moving into its history in the Muslim world. While so doing, Islamic principles are emphasized wherever necessary such as introducing the concept of 'Jihad' and the respective conduct of Muslim rulers in the past. In addition, case studies are discussed in order to provide an overview of warfare strategies of Muslims in comparison to the West.					
Course Learning Outcomes					
Upon completion of the course, students will be able to:					
<ol style="list-style-type: none"> 1. Comprehend the concept and importance of Maritime affairs/studies in Islam. 2. Understand Muslim contributions in maritime domain. 3. Evaluate the role of Muslim admirals in the spread of Islam and its rule. 4. Acknowledge the role of Navy in peace keeping from the Islamic perspective of Jihad. 					
Teaching and Learning Methodology					
<ol style="list-style-type: none"> 1. Lectures demonstration 2. Handouts 3. Use of multimedia 4. Group discussions 5. Presentations 6. Internet resource materials 7. Assignments and quizzes 8. Documentaries 					
Textbook(s)					
<ul style="list-style-type: none"> ❖ Notes will be furnished by the Faculty. 					
Reference Book(s)					
<ol style="list-style-type: none"> 1. <i>Maritime Doctrine of Pakistan</i> War College Lahore 2. <i>Story of Pakistan Navy 1947-1972</i> History Cell Pakistan Navy NHQ 3. Hugh Kennedy, <i>The Great Arab Conquests</i>, Philadelphia: Da Capo Books, 2008. 4. Anwar, Muhammad <i>Smaller Navies</i> 5. Nawaz, Muhammad <i>Islami Bahria</i>. 6. Salim T.S. Al-Hassani <i>1001 Inventions: The Enduring Legacy of Muslim Civilization</i>, 1001 Inventions Ltd., 2011. 7. A. M. Fahmy, <i>Muslim Naval Organization in the Eastern Mediterranean from the Seventh to the Tenth Century AD</i>, 2nd Ed., Cairo, 1966. 					

8. Ross Dunn, *The Adventures of Ibn Battuta, A Muslim Traveler of the 14th Century*, Berkeley: University of California Press, 2005.
9. Sean Foley, "Muslims and Social Change in the Atlantic Basin", in *Journal of World History*, 20/3, September 2009.

Grading Policy

Assessment Instruments	Percentage
Quizzes	10%
Assignments	20 %
Mid Term Exam	30 %
Final Exam	40 %

Week#	Contents
1	<p>Introduction</p> <ul style="list-style-type: none"> • Maritime • Navy and Merchant Navy • Marines • Bahria • Oceanology <p>CLO 1</p>
2	<p>Concept of Jihad/warfare in Islam</p> <ul style="list-style-type: none"> • Maritime expeditions mentioned in Qur'an • Importance of Bahria in Islam <p>CLO 1, CLO 4</p>
3	<p>Establishment of Navy in the Muslim World</p> <ul style="list-style-type: none"> • The era of righteous caliphate • Battle of the Masts/Pheonix (654 C.E.) <p>CLO 2</p>
4	<p>Role of Muslim merchant sailors in spreading Islam</p> <ul style="list-style-type: none"> • The case of sub-continent <p>CLO 2</p>
5	<ul style="list-style-type: none"> • Umayyid Dynasty • Role of Tariq Ibn Ziyad (d.720 C.E.) <p>CLO 2</p>
6	<ul style="list-style-type: none"> • Abbasid and Ottoman Dynasties (An overview) <p>CLO 2</p>
7	<ul style="list-style-type: none"> • Fatimid Navy (Important accomplishments) <p>CLO 2</p>

8	<p>Muslim Contributions in Maritime Domain</p> <ul style="list-style-type: none"> • Compass • Maps • Navigation instruments • Foundation of Satellites • Muslim Travelers (Ibn Battuta, Sinbad) <p>CLO 1, CLO 3</p>
	MID-TERM EXAM
10	<p>Muslim Admirals in History</p> <ul style="list-style-type: none"> • Zheng He (d.1435) • Heraddin Barbarosa (d.1546) • Ahmad Muhiddin Piri (d. 1553) <p>CLO 3</p>
11	<p>Merchant Navy</p> <ul style="list-style-type: none"> • The importance of ports and sea trade • Maritime Silk Roads <p>CLO 1, CLO 3</p>
12	<p>Role of Muslims in spreading Religion: A case study</p> <ul style="list-style-type: none"> • Judaism • Christianity • Islam <p>CLO 4</p>
13	<p>Pakistan Navy</p> <ul style="list-style-type: none"> • Establishment and Mission • Current role and status <p>CLO 3, CLO 4</p>
14	<p>Role of Muslim Navy in the contemporary world (A comparative study)</p> <ul style="list-style-type: none"> • Pakistan Navy • Turkish Navy <p>CLO 4</p>
15	<p>Modern Economic Warfare and Peacekeeping: An Islamic Perspective</p> <ul style="list-style-type: none"> • Role of Maritime • Importance of adopting latest technologies and strategies • Comparative analysis of the West with the Islamic world Contemporary challenges <p>CLO3, CLO 4</p>
16	FINAL EXAM

BU APPROVED DIPLOMA COURSES – PAKISTAN NAVY FINISHING SCHOOLS**CULINARY ARTS AND HOSPITALITY**

Course Duration	Eligibility Criteria	Selection Procedure
3 Months	<ul style="list-style-type: none"> Qualification – Matriculation or higher. Age – 18 to 45 years 	Filling of Personal Details proforma, followed by interview as per PNFS Policy

Fee Structure*

Category	Fee per Month	Total Course Cost
Officers' Wives and Wards	Rs 13,500	Rs 40,500
CPOs/ Sailors Wives and Ward	Rs 9,000	Rs 27,000
Civilians	Rs 18,000	Rs 54,000
BU Faculty Members and Students	Rs 9,000	Rs 27,000

* Fee may be reviewed by PNFS as approved by the President PN Women Association, subject to ratification by BU Academic Council.

Course Description

Level Description – 2

1st Month – Soups and Salads (8 contact hours per week).

2nd Month – Cuisines (8 contact hours per week).

3rd Month – Baking (8 contact hours per week).

Learning Outcomes

Module	Learning Objectives	Contents & Outcomes
Soups and Salads	<ul style="list-style-type: none"> Planning a nutritious and aesthetically pleasing meal by preparing a soup and salad. Applying the necessary skills and following the Dietary Guidelines and Food Guide Pyramid. The students need to know the importance of fruits and vegetables in the diet. To learn how to select and prepare fruits and vegetables to preserve the nutrients, color, flavor and texture. 	1 st Week – Various Soups 2 nd Week – Various types of Salads & Sauces 3 rd Week – Various types of Sandwiches & Omelets 4 th Week – Frying Outcome <ul style="list-style-type: none"> To understand the importance of food and nutrition according to different age groups. To understand caloric intake of different food.

Cuisines	<ul style="list-style-type: none"> • Evaluate the quality of culinary services by applying quality control principles. • Apply classical and modern cooking techniques to a variety of cuisines (products). • Demonstrate appropriate sanitation and safety practices in kitchen settings. • Learn about types of food eaten by people in earlier times. • Learn how people acquired what they ate. • Learn about the utensils and dishes people used to prepare and serve food. • Learn about seasonal variability in food. • Learn how food was preserved for future use. 	<p>1st Week – Desi Cuisine</p> <p>2nd Week – Continental Cuisine</p> <p>3rd Week – Chinese Cuisine</p> <p>4th Week – Desserts</p> <p>Outcome</p> <p>To learn the skills and knowledge that are required of a chef in the kitchen, which includes not only knowing how to cook but also how to create new dishes, how to keep the kitchen safe and how to run the kitchen efficiently.</p>
Baking	<ul style="list-style-type: none"> • To Identify and explain baking terms, ingredients, equipment and tools. • Employ safe food handling practices using contemporary guidelines • Scale and measure ingredients. • Prepare yeast dough, quick breads, pies, cookies, cakes, icing and savory baking. • Produce baked products using commercial ingredients and equipment. 	<p>1st Week – Introduction to Baking (Beginners Level); Various types of Savory</p> <p>2nd Week – Various types of simple Cakes</p> <p>3rd Week – Advance Level; Cream Cakes, Pizza</p> <p>4th Week – Fondants / Table & trolley laying + Dinning manners & Etiquettes</p> <p>Outcome</p> <p>To learn making sweet and savory items using relevant kitchen equipment and dry heating method.</p>

Assessment Methodology

Quizzes – 10%	Assignments – 30%;	Presentation – 20%;	Final Project – 40%
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- Minimum qualifying marks for award of Diploma – 50%.
- Distinction Certificate – highest position holder, with at least 85% total marks attained.
- Students with less than 50% total marks – award of Attendance Certificate.
- Record of results maintained by PNFS.

Diploma Signatories

- President PNFSs.
- Director LDC.

Recommended Reading Material

- Intuitive Eating by Evelyn Tribole
- Soups and Salads by Tarla Dalal
- The Art of Salad Making by Carol Truax
- Chinese: The Essential Wok Cookbook by Naomi Imatome-Yun
- The Taste of Mexico by Patricia Quintana
- Simple Thai Food by Leela Punyaratabandhu
- Essentials of Classic Italian Cooking by Marcella Hazan
- Pakistan Heritage Cuisine – A Food Story by Sayeeda Leghari
- Mary Berry's Baking Bible
- Flour Water Salt Yeast by Ken Forkish
- <https://youtu.be/NxASTJcw6KY>
- <https://youtu.be/ED-SdFlVYoc> Intuitive Eating, by Evelyn Tribole.
- The Field Guide to Decorating.

GROOMING AND FASHION DESIGNING

Course Duration	Eligibility Criteria	Selection Procedure
3 Months	<ul style="list-style-type: none"> • Qualification – Matriculation or higher. • Age – 18 to 45 years 	Filling of Personal Details proforma, followed by interview as per PNFS Policy

Fee Structure*

Category	Fee per Month	Total Course Cost
Officers' Wives and Wards	Rs 13,500	Rs 40,500
CPOs/ Sailors Wives and Ward	Rs 9,000	Rs 27,000
Civilians	Rs 18,000	Rs 54,000
BU Faculty Members and Students	Rs 9,000	Rs 27,000

* Fee may be reviewed by PNFS as approved by the President PN Women Association, subject to ratification by BU Academic Council.

Course Description

Level Description – 2

1st Month – Fashion and Clothing (8 contact hours per week).

2nd Month – Self Grooming (8 contact hours per week).

3rd Month – Physical Fitness (8 contact hours per week).

Learning Outcomes

Module	Learning Objectives	Contents & Outcomes
Fashion and Clothing	<ul style="list-style-type: none"> • To promote an understanding of Fashion and Textile Design in relation to the needs of fashion. 	1 st Week – Introduction to Fashion and Clothing 2 nd Week – Fabric Painting

	<ul style="list-style-type: none"> • To provide experience in responding to market opportunities with creative and innovative products that integrate a set of academic disciplines such as textile materials. • To promote an understanding of Fashion and Textile Design in relation to the needs of fashion, contractual furnishings, home textiles, and the business to business textile products. 	<p>3rd Week – Oil and Water Colour Painting 4th Week – Advance Oilt Painting and Gift Wrapping</p> <p>Outcome</p> <ul style="list-style-type: none"> • To make students understand their personality type & dress up according to different occasions & climatic change. • To have complete understanding of fabrics & handling of basic wear and tear.
Self-Grooming	<ul style="list-style-type: none"> • The objective of the programme is to build self-confidence, enhance self-esteem and improve overall personality of the participants. • Polishing manners to behave appropriately in social and professional circles. • Enhancing the ability to handle casual and formal situations in terms of self-grooming, dining and entertaining etiquette. • Developing and maintaining a positive attitude and being assertive. 	<p>1st Week – Beauty Care and Hairdo 2nd Week – Everyday Makeup and Hairdo 3rd Week – Party Makeup and Hairdo 4th Week – Personal Wardrobe and Planning</p> <p>Outcome</p> <p>To acquires basic knowledge of self-care, self-presentation and how to carry oneself with style and elegance.</p>
Physical Fitness	<ul style="list-style-type: none"> • Recognize the physical and mental benefits of increased activity. • Understand anatomy, basic bio mechanical principles and terminology. • Determine factors involved with development, fitness levels and training strategies. • Examine the effect of nutrition, rest and other lifestyle factors that contribute to better health. • Explain the concept of wellness and the benefits of regular 	<p>1st to 3rd Week – Yoga 4th Week – Swimming/ Gym / Martial Arts / Intro to Golf / Horse Riding</p> <p>Outcome</p> <p>To nurture personality factors and emotional regulation through physical fitness lifestyle.</p>

	<p>exercise in improving health and wellness.</p> <ul style="list-style-type: none"> • Identify and assess their own health and fitness markers. • Perform various exercise activities at a level that will lead to improvement in fitness. • Recognize a healthy blood pressure and resting heart rate. • Develop an understanding of the methods used to improve muscular strength, muscular endurance and flexibility. 	
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Assessment Methodology

Assessment Category	Fashion and Clothing	Self-Grooming
Quizzes	10%	10%
Assignments	30%	40%
Presentation	20%	30%
Final Project	40%	20%

- Minimum qualifying marks for award of Diploma – 50%.
- Distinction Certificate – highest position holder, with at least 85% total marks attained.
- Students with less than 50% total marks – award of Attendance Certificate.
- Record of results maintained by PNFS.

Diploma Signatories

- President PNFSs.
- Director LDC.

Recommended Reading Material

- **Fashion and Clothing**
 - The Golden Thread: How Fabric Changed History by Kassia St. Clair
 - The Glass of Fashion: A Personal History of Fifty Years of Changing Tastes and the People Who Have Inspired Them by Cecil Beaton
 - Pakistan: A Fashionable History by Mehr Fatima Husain and Saad Sarfraz Sheikh
 - Textile and Clothing Sustainability: Recycle and Up Cycled Textiles and Fashions
 - Kabinett & Kammer- Creating Authentic Interiors
 - <https://youtu.be/Xz6DyDOPJxY>
 - <https://youtu.be/ERLYogkEozk>
- **Self-Grooming**
 - Bobbi Brown Makeup Manual: For Everyone from Beginner to Pro
 - I Am Beauty: Timeless Skincare and Beauty for Women 40 and Over
 - Face Forward by Kevyn Aucoin
 - Skincare: The Ultimate No-nonsense Guide
 - [Natural Hair Care by Susan Hollister](#)
 - <https://youtu.be/v6SzrlHYEiY>

Physical Fitness

- The Fitness Mindset by Coach Brian Keane
- Breathwork by Yoga Teacher Valerie Moselle
- Power Yoga by Leah Cullis
- Motivational Yoga by Nancy Gerstein
- The Swimmer's Workout Handbook by Terri Schneider
- <https://youtu.be/v7AYKMP6rOE>

**NEW PROGRAMME PROPOSAL - DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE
AT BULC**

A. ACADEMIC DETAILS	
1	Faculty/Department: <i>Engineering Science/Computer Sciences</i>
2	Title of the Programme: (to be printed on Degree/Transcript) <i>Doctor of Philosophy in Computer Science</i>
3	Mission of the Programme: <i>The mission of the PhD Computer Science program is to prepare individuals to work as independent computing researchers who can take an interdisciplinary approach to solve basic and applied research problems. Students graduating with this degree are prepared for careers as university educators, research scientists or specialized professionals within the field of computing.</i>
4	Objectives of the Programme: <i>The key objectives of the PhD (CS) program include the following:</i> <ol style="list-style-type: none"> 1. <i>To prepare scholars to have an understanding of the processes of research which will enable them to independently make original, creative and useful research contributions.</i> 2. <i>To prepare scholars to effectively convey technical contributions through written and oral communication.</i> 3. <i>To enable scholars to carry out research independently as well as in teams.</i> 4. <i>To acquaint scholars with and enable them apply professional code of ethics in research endeavors.</i>
5	Outcomes of the Programme: Students graduating from the PhD (CS) program are expected to: <ol style="list-style-type: none"> 1. Critically analyze relevant works and demonstrate creativity and innovation by generating new ideas. 2. Apply the theoretical knowledge and concepts to find answers to research questions. 3. Carry out skilled research, identify, comprehend and synthesize relevant literature, select appropriate techniques and tools to solve the research problem, analyze data produced by experiments and research and, draw meaningful conclusion from the realized results. 4. Demonstrate comprehensive in depth knowledge of the theory, methods and algorithmic principles in the relevant area of study. 5. Demonstrate leadership qualities through research and other scholarly assignments. 6. Be able to convey research contributions, ideas and arguments in a clear and organized form through technical reports and research publications at reputed publication forums.
6	Rationale for the Programme: <ul style="list-style-type: none"> • <i>PhD (CS) program is designed to train students in academic and research skills</i> • <i>The students will be trained to meet the current national and international challenges particularly in the emerging fields of computer science</i>
7	Brief Description of the Programme: <i>PhD (CS) is a 3 year full-time evening program.</i> Comprised of 6 semesters <i>54 credit hours</i> <i>bi-annual intake</i> <i>Coursework = 18 Credit Hours</i> <i>Thesis = 36 Credit Hours</i> The PhD program consists of 18 credit hours of course work and 36 credit hours of research work. Coursework should be completed in the first two semesters. After successful completion of coursework, a PhD scholar is required to appear in the comprehensive examination. After passing comprehensive

	examination PhD scholar can register in the research phase by registering THS 900 PhD Thesis course. The first milestone in research phase is to prepare and submit a research Proposal under the guidance of a supervisor. The scholar appears before a panel of examiners to defend the research proposal. After successful defense, the scholar needs to carry out his/her research and complete total 36 credits of research. The scholar will present the research finding in the form of a written thesis, which shall be evaluated as per HEC and BU rules. For further details about rules governing PhD programs refer to PhD Rules Handbook. Semester wise breakdown of the program is as follows
8	Duration: 3 Years
9	Venue(s): On Site/Off Site/Both On & Off Site (Tick one; if Off Site, give details)
10	Programme Scheduling Format: Morning/Evening/Weekend (tick one) Semester/Annual/ (tick one)
11	Proposed Date of Commencement: Fall 22
12	Mode of Study/Examination: <i>It is comprised of 6 semesters with 54 credit hours with bi-annual intake</i> <i>Coursework = 18 Credit Hours</i> <i>Thesis = 36 Credit Hours</i>
13	Additional Faculty Member(s) Required: (Indicate if there is a requirement for additional faculty members, fulltime/visiting, along with qualifications.) No additional faculty required
14	Additional Skilled-Worker(s) Required: (Indicate if there is a requirement for additional Skilled Staff, fulltime/part-time, along with their qualifications/skill sets.) No additional skilled-worker required
15	Additional Classroom(s) required: (The requirement is to include the number of classrooms and their capacities.) No additional classrooms are required
16	Additional Requirement for Laboratories: (The requirement is to include the number of laboratories, their equipment and their capacities.) No additional Laboratories are required
17	Additional Requirement for Books, Subscriptions, Memberships to Online Research Sites/ Repositories: No additional requirement in the beginning
18	Minimum Qualification for Admission: <ul style="list-style-type: none"> • <i>18 Years of education in Computer Science or relevant discipline from an HEC recognized university with a minimum CGPA of 3.00/4.00 (Semester System) or 60% marks (Annual System).</i>
19	Admission Eligibility Criteria: (to be aligned with accreditation/regulatory bodies) <ul style="list-style-type: none"> • <i>18 Years of education in Computer Science or relevant discipline from an HEC recognized university with a minimum CGPA of 3.00/4.00 (Semester System) or 60% marks (Annual System).</i> • <i>GAT (Computer Science) / GRE (Computer Science) with minimum 60% marks, or University Based Subject Test passed with minimum 70% marks.</i> • <i>Initial Research Proposal/Statement of Purpose is required at the time of PhD admission.</i>
20	Additional/Different Examination Requirement (Indicate if there will be any examination requirement, additional to or different from the BU Academic Rules or Examination Policy in vogue). Nil
21	Number of Admissions Expected for First Intake: 5
22	Number of Admissions Planned/Expected for Subsequent Intakes: 5 per annum
23	Referred by: (delete which is inapplicable) FBOS: Agenda Item 2308

24	Complete Plan of Studies, inclusive of complete Roadmap: (Attach as Annex 'B')																						
25	Course Outlines, Descriptions, Pre-Requisites & Readings (Compulsory & Recommended) (Attach as Annex 'C')																						
B. FINANCIAL DETAILS																							
1	Source of Funding: <ul style="list-style-type: none"> • BU: Fully/Partially: • Public Sector (B1): Fully/Partially (provide complete details; attach MOU, agreement etc.) • NNGO (B1): Fully/Partially (provide complete details; attach MOU, agreement etc.) • INGO (B1): Fully/Partially (provide complete details; attach MOU, agreement etc.) • UN/IGO (B1): Fully/Partially (provide complete details; attach MOU, agreement etc.) 																						
2	Degree Duration:	<u>Annual or Semester System:</u> Semester: 6 Semesters																					
	Total Number of Credit Hours: 54																						
3	Expected fee to be charged based on Cost & Benefits Analysis: (show working) Per annum fee: or Fee rate per credit hour: 6065 <table border="1" style="margin-top: 10px;"> <tr> <td>Credit Hours</td><td>9</td></tr> <tr> <td>Rate Per Credit Hours</td><td>6065</td></tr> <tr> <td>Tuition Fee</td><td></td></tr> <tr> <td>Tuition Fee Per Semester</td><td>54,585</td></tr> <tr> <td>Admission Fee (One Time)</td><td>25,000</td></tr> <tr> <td>Caution Money (Refundable)</td><td>10,000</td></tr> <tr> <td>Degree Fee (One Time) *</td><td>-</td></tr> <tr> <td>Misc. Charges **</td><td>5,000</td></tr> <tr> <td>Total</td><td>94,585</td></tr> </table>			Credit Hours	9	Rate Per Credit Hours	6065	Tuition Fee		Tuition Fee Per Semester	54,585	Admission Fee (One Time)	25,000	Caution Money (Refundable)	10,000	Degree Fee (One Time) *	-	Misc. Charges **	5,000	Total	94,585		
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4	Expected Number of students for 1st & 2nd Intakes: 5 each																						
5	Expected Earning from first two Intakes (B5): (Show working) Rs. 1284950/- <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Per Year</th><th>No.s of Students</th><th>Semester Wise Income</th><th>Annual Income</th></tr> </thead> <tbody> <tr> <td>Fall 2022</td><td>5</td><td>486,650</td><td></td></tr> <tr> <td>Spring 2023</td><td>10</td><td>798,300</td><td>1,284,950</td></tr> </tbody> </table>			Per Year	No.s of Students	Semester Wise Income	Annual Income	Fall 2022	5	486,650		Spring 2023	10	798,300	1,284,950								
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6	Expected Earnings for the Next Five Years (B6): (show working) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Per Year</th><th>No.s of Students</th><th>Semester Wise Income</th><th>Annual Income</th></tr> </thead> <tbody> <tr> <td>Fall 2022</td><td>5</td><td>486,650</td><td></td></tr> <tr> <td>Spring 2023</td><td>10</td><td>798,300</td><td>1,284,950</td></tr> <tr> <td>Fall 2023</td><td>15</td><td>1,124,350</td><td></td></tr> <tr> <td>Spring 2024</td><td>20</td><td>1,479,200</td><td>2,603,550</td></tr> </tbody> </table>			Per Year	No.s of Students	Semester Wise Income	Annual Income	Fall 2022	5	486,650		Spring 2023	10	798,300	1,284,950	Fall 2023	15	1,124,350		Spring 2024	20	1,479,200	2,603,550
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	Fall 2024	25	1,880,625	
	Spring 2025	30	2,271,750	4,152,375
	Fall 2025	30	2,366,250	
	Spring 2026	30	2,366,250	4,732,500
	Fall 2026	30	2,466,150	
	Spring 2027	30	2,466,150	4,932,300
	G. Total		17,705,675	17,705,675
7	Total Estimated Salaries of all Additional Human Resources per annum (B7): (Show working) No additional human resource is required however expense of Rs. 18,00,00/- per annum with 5% increase every year is included for faculty engaged in Ph.D coursework			
8	Cost of Additional Laboratory Equipment/Tools (B8): (show working) 0			
9	Cost of Additional Classrooms (B9): (Include furniture, technical aids etc) 0			
10	Cost of Additional Books, Subscription & Memberships to on-line Sites/Repositories (B10): (show details) 0			
11	Off-Site rental Expenses and Cost of other Fixtures (B11): (Show details) 0			
12	Miscellaneous Expenses required for Starting the Program (B12): - Nil			
13	Annual Recurring Expenditures in Subsequent Years (B13): <ul style="list-style-type: none"> - Salaries: - Rentals: - Subscriptions/Memberships: - Advertisements: - Printing & Stationery: - Admin Cost - Any other - 			
14	Total Cost of the Programme (B14): [Add B(7) to B(12)] Rs. 18,00,000/-			
15	Net Cost of the Programme (B15): [Subtract B(1) from B(14)] Rs. 18,00,000/-			
16	Net Earnings in First Year (B16: [Subtract B(15) from B(5)] Rs. (169100)			
17	Projected Annual Gross Earning in Subsequent Years (B 17): (show details & working; add 10% towards all expenses in subsequent years.)			
	Per Year	No.s of Students	Semester Wise Income	Annual Income
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	Spring 2023	10	798,300	1,284,950
	Fall 2023	15	1,124,350	
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	Spring 2027	30	2,466,150	4,932,300				
	G. Total		17,705,675	17,705,675				
18	Projected Annual Net Earning in Subsequent Years: [Subtract B(13) from B(17)]							
Per Year	Annual Income	PhD Expenses	Supervisor	External	Internal	Year	Annual Income	
Fall 2022								
Spring 2023	1,284,950	1,800,000				1,800,000	(515,050)	
Fall 2023			165,000		35,000			
Spring 2024	2,603,550	1,857,600	165,000		35,000	2,257,600	345,950	
Fall 2024			165,000		35,000			
Spring 2025	4,152,375	1,915,200	165,000	500,000	35,000	2,815,200	1,337,175	
Fall 2025			165,000	550,000	35,000			
Spring 2026	4,732,500	1,972,800	165,000	605,000	35,000	3,527,800	1,204,700	
Fall 2026			165,000	665,500	35,000			
Spring 2027	4,932,300	2,030,400	165,000	732,050	35,000	3,827,950	1,104,350	
G. Total	17,705,675	9,576,000	1,320,000	3,052,550	280,000	14,228,550	3,477,125	

ROADMAP – DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE AT BULC

Campus:	<u>Bahria University Lahore Campus, Lahore</u>
Department:	<u>Department of Computer Sciences</u>
Program Title:	<u>Doctor of Philosophy in Computer Science</u>
Program Level:	<u>PhD</u>
Total Duration of Program:	<u>3 Years</u>
Total Number of semesters:	<u>6 Semesters</u>
Total Credit Hours:	<u>54 Credit Hours</u>

SEMESTER I		
Course code	Subject	Credits
	Course Work (Student shall study 3 courses)	9
	Total credits for 1 st semester	9

SEMESTER II		
Course code	Subject	Credits
	Course Work (Student shall study 3 courses)	9
	Total credits for 2 nd semester	9

SEMESTER III		
Course code	Subject	Credits
	Comprehensive exam	0
THS 900	PhD Thesis	9
	Total credits for 3 rd semester	9

SEMESTER IV		
Course code	Subject	Credits
THS 900	PhD Thesis	9
	Total credits for 4 th semester	9

SEMESTER V		
Course code	Subject	Credits
THS 900	PhD Thesis	9
	Total credits for 5 th semester	9

SEMESTER VI		
Course code	Subject	Credits
THS 900	PhD Thesis	9
	Total credits for 6 th semester	9
	Total credit for the program	54

PhD Computer Science Coursework

1. A PhD scholar will select 6 courses in consultation and approval of supervisor/advisory committee from the following list of courses.
2. Scholar can choose minimum of 3 courses from Category 1 courses and maximum of 3 courses from Category 2 courses. Scholar will also be able to take all 700+ courses from MS Computer Science as Category 1 courses.
3. 700+ courses of relevant MS/PhD programs (Software Engineering, Telecom and networks, Information Security, Data Science etc) will be inclusive in category 1 or 2 based on subject area of research. Supervisor/Advisory committee will decide about the relevance of such courses for each scholar.
4. It is mandatory to study ESC 701 Research Methodology, if the scholar has not studied this or equivalent course in MS program.

Category – I Computer Science Courses			
Sr.No.	Course Code	Title of Course	Credit Hours
Artificial Intelligence			
1	CSC 711	Advanced Artificial Intelligence	3
2	CSC-719	Machine Learning	3
3	CSC-741	Advanced Natural Language Processing	3
4	CEN-745	Advanced Digital Image Processing	3
5	CSC 761	Advanced Neural Networks	3
6	CSC-751	Pattern Recognition	3
7	CSC-764	Computer Vision	3
8	CSC 765	Bio Medical Image Analysis	3
9	CSC-750	Intelligent Tutoring Systems	3
10	CSC-715	Intelligent Agents	3
11	CSC 744	Advanced Computer Graphics	3
Data Science			
12	DSC-701	Big Data Analytics	3
13	DSC-702	Machine Learning and Data Analysis	3
14	DSC-703	Data Visualization	3
15	DSC-704	Distributed Data Engineering	3
16	DSC-705	Deep Learning and Data Analysis	3
17	DSC-706	Unstructured Data Processing	3
18	CSC-746	Advanced Data Mining	3
19	CSC-747	Text Mining	3
Networks & Security			
20	EET-710	Advanced Computer Networks	3
21	EET-702	Advanced Network Security	3
22	EET-713	Advanced Network Design	3
23	EET-716	Advanced Topics in Wireless Networking and Communications	3
24	EET-718	Network Performance Evaluation	3
25	EET-761	Network Protocols and Standards	3
26	EET-705	Broadband Technologies and Components	3
27	EET 726	Advanced Internet Technologies	3
28	EET-850	Wireless Sensor Networks	3

29	EET-851	Mobile and Ad hoc Networks	3
30	ISC-721	Advanced Cryptography and Cryptanalysis	3
31	ISC-731	Information Security Management	3
32	ISC-733	Information Hiding	3
33	ISC-734	Wireless Network Security	3
34	ISC-735	Cloud Computing Security	3
35	ISC-736	Cyber Warfare	3
36	ISC-737	Computer and Network Forensics	3
37	ISC-738	Ethical Hacking	3
38	ISC-739	Cyber Crimes and Laws	3
39	ISC-740	Quantum Cryptography	3
40	ISC-741	Algebraic Cryptanalysis	3
41	ISC-742	Intrusion Detection and Prevention	3
42	ISC-743	Penetration Testing and Vulnerability Analysis	3
Databases & Web Systems			
43	CSC-720	Advanced Operating Systems	3
44	CSC 758	Parallel Processing	3
45	CEN 707	Advanced Distributed Systems	3
46	CSC-752	Advanced DBMS	3
47	CSC-753	Distributed Databases	3
48	CSC-754	Object Oriented Databases	3
49	CSC-755	Web based DBMS	3
50	CSC-756	Multimedia Databases	3
51	CSC-760	Advanced Data Warehousing	3
52	CSC-781	Cloud Computing	3
53	SEN 761	Semantic Web	3
54	SEN 764	Ontology Engineering	3
55	CSC-757	IP Multimedia System	3
56	SEN 754	Advanced Web Computing System and Applica	3

Category – II Cross Domain Courses			
Sr.No.	Course Code	Title of Course	Credit Hours
1	GSC 700	Advanced Engineering Mathematics	3
2	CEN 720	Advanced Computer Architecture	3
3	CEN 708	Advanced System Modeling and Simulation	3
4	SEN 720	Advanced Human Computer Interaction	3
5	SEN 723	Formal Methods and Specifications	3
6	SEN 751	Human Aspects in Software Engineering	3
7	SEN 753	Power Aware Computing	3
8	SEN 755	Service Oriented Computing	3
9	SEN 756	Advanced Usability Engineering	3
10	SEN 758	Component based Software Engineering	3
11	SEN 759	Software Re-Engineering	3
12	SEN 760	Complex Adaptive Systems	3
13	SEN 763	Advanced Software Engineering	3
14	SEN 812	Agile Methods	3
15	SEN 813	Advanced Software Requirements Engineering	3
16	SEN 814	Ubiquitous Computing and Interaction	3
17	SEN 815	Verification and Validation	3
18	SEN 816	Middleware for Networked and Distributed Systems	3
19	SEN 817	Information Retrieval	3
20	EET 703	DSP Application in Telecommunication	3
21	EET 706	Advanced Optical Fiber Networks	3
22	EET 707	Telecommunications Business Environment	3
23	EET 751	Antenna and Microwave Engineering	3
24	EET 756	Telecommunication Switching Systems	3
25	EET 765	Radio Frequency Engineering	3
26	ESC 703	Advanced Qualitative Research Methods	3
27	ESC 704	Advanced Quantitative Research Methods	3
28	ESC 705	Critical Review of Literature	3
29	ESC 701	Research Methodology	3

COURSE DESCRIPTION – PHD IN COMPUTER SCIENCE

CSC 711

Advanced Artificial Intelligence

This course in Artificial Intelligence (AI) deals with the coverage of search, knowledge representation and reasoning, machine learning (paradigms, models, and algorithms), use of knowledge in learning, and AI applications. The emphasis of the course is on recent developments in AI (i.e., beyond monkeys and bananas), especially contributions that forged novel connections among diverse areas, or addressed problems of significant impact. The goal is to emphasize certain thematic issues that recur in AI systems and applications.

CSC 719

Machine Learning

Machine learning is a scientific discipline concerned with the design and development of algorithms that allow computers to evolve behaviors based on empirical data, such as from sensor data or databases. A learner can take advantage of examples (data) to capture characteristics of interest of their unknown underlying probability distribution. Data can be seen as examples that illustrate relations between observed variables. A major focus of machine learning research is to automatically learn to recognize complex patterns and make intelligent decisions based on data; the difficulty lies in the fact that the set of all possible behaviors given all possible inputs is too large to be covered by the set of observed examples (training data).

CSC 741

Advanced Natural Language Processing

This course is a graduate introduction to natural language processing - the study of human language from a computational perspective. It covers syntactic, semantic and discourse processing models, emphasizing machine learning or corpus-based methods and algorithms. It also covers applications of these methods and models in syntactic parsing, information extraction, statistical machine translation, dialogue systems, and summarization. The subject qualifies as an Artificial Intelligence and Applications concentration subject.

CEN 745

Advanced Digital Image Processing

This course covers advanced topics in digital image processing including wavelet and multi-resolution image processing, image compression, image segmentation, image representation and description, and object recognition. Implementation of digital image processing algorithms using MATLAB Image Processing Toolbox is also done.

CSC 761

Advanced Neural Networks

The goal of this course is to familiarize students with a powerful class of model, the Neural Network. In fact, this is a broad term which includes many diverse models and approaches. We will first motivate networks by analogy to the brain. The analogy is loose but serves to introduce the idea of parallel and distributed computation. We then introduce one kind of network in detail: the feed-forward network trained by back propagation of error. The course then discusses model architectures, training methods and data representation issues. The course aims to cover everything a student needs to know to get back-propagation working. A range of applications and extensions to the basic model will be presented in the final section of the module.

CSC 751

Pattern Recognition

The goal of this course is to provide the advance concepts of machine learning and pattern recognition with examples from several application areas. The students will be acquainted with real world regression and classification problems and the models and classifiers to solve these problems. Students will also be introduced to dimensionality reduction and feature selection concepts. Additionally, students will be exposed to various clustering techniques. A key objective to this course is for the students to also acquire hands-on experience related to classification and clustering tasks

CSC 764

Computer Vision

By the end of this course, the students would have developed an understanding of the problems in simulating human perception into machines. Students will have a thorough understanding of the state of the art computer vision methods, algorithms and results. The students will also be able to apply the tools and techniques learned to solve practical vision related problems.

CSC 765

Bio Medical Image Analysis

The objective of the course is to learn how to “process” signals to obtain medical images for each modality (based on its physics, mathematical modeling and instrumentation) but not digital signal processing (DSP) of medical imaging. The course will focus on topics like Imaging quality, Physics of radiography, Projection radiography, Computed tomography (CT), Physics of nuclear medicine, Planer scintigraphy, Emission computed tomography (SPECT, PET), Physics of ultrasound, Ultrasonic imaging systems etc.

CSC 750

Intelligent Tutoring Systems

An intelligent tutoring system (ITS) provides individualized computer-based instruction to students. These systems emerged from application of artificial intelligence techniques to the computer aided instruction (CAI) systems. The difference is that an ITS usually compares the student's work with expert solutions or strategies, models the student's probably knowledge of a domain, and provides coaching or advice, taking into account what the student's knowledge state, preferred learning style, etc. In this course, students will test drive several successfully deployed ITSs, learn ideas from artificial intelligence and cognitive psychology that are needed to build these systems, review and discuss fundamental papers in the field, construct small prototypes using two state of the art authoring tools, and analyze, design and develop a prototype ITS for a practical tutoring problem.

CSC 715

Intelligent Agents

This course gives a broad introduction to the new and rapidly expanding field of agent-based computing. It introduces the key concepts and models of the field, dealing both with the individual agents and with their interactions. Particular emphasis is placed on automated negotiation, cooperation and on-line auctions, and students are required to program a trading agent in Java which will compete in a class tournament within a simulated trading environment.

CSC 744

Advanced Computer Graphics

This course is intended to provide a graduate-level introduction to modern computer graphics. We will cover some of the basic background of 3D computer graphics in the areas of geometry, physical simulation and rendering. The course is intended to bring incoming graduate students or advanced undergraduates up to the research frontier, and prepare them for further work in the field. As such, at least half the material in the course will go over topics of current research interest, such as the physical simulation and coupling of solids and fluids, and precomputation-based methods for real-time rendering.

DSC 701

Big Data Analytics

The explosion of social media and the computerization of every aspect of social and economic activity resulted in creation of large volumes of mostly unstructured data: web logs, videos, speech

recordings, photographs, e-mails, Tweets, and similar. In a parallel development, computers keep getting ever more powerful and storage ever cheaper. Today, we have the ability to reliably and cheaply store huge volumes of data, efficiently analyze them, and extract business and socially relevant information. The key objective of this course is to familiarize the students with most important information technologies used in manipulating, storing, and analyzing big data. Examine the basic tools for statistical analysis, R and Python, and several machine learning algorithms. The emphasis of the course will be on mastering Spark 2.0 which emerged as the most important big data processing framework. We will examine Spark ML (Machine Learning) API and Spark Streaming which allows analysis of data in flight, i.e. in near real time. We will learn about so-called NoSQL storage solutions exemplified by Cassandra for their critical features: speed of reads and writes, and ability to scale to extreme volumes. We will learn about memory resident databases (VoltDB, SciDB) and graph databases (Ne4J). Students will gain the ability to initiate and design highly scalable systems that can accept, store, and analyze large volumes of unstructured data in batch mode and/or real time. Most lectures will be presented using Python examples. Some lectures will use Java and R.

DSC 702

Machine Learning and Data Analysis

Machine learning is the process of developing, testing, and applying predictive algorithms to achieve this goal. This course introduces students to integral supervised machine learning concepts, and will provide an overview of many additional concepts, techniques, and algorithms in machine learning, from basic classification to decision trees and clustering. By completing this course, you will learn how to apply, test, and interpret machine learning algorithms as alternative methods for addressing your research questions.

DSC 703

Data Visualization

This course is all about data visualization, the art and science of turning data into readable graphics. We'll explore how to design and create data visualizations based on data available and tasks to be achieved. This process includes data modeling, data processing (such as aggregation and filtering), mapping data attributes to graphical attributes, and strategic visual encoding based on known properties of visual perception as well as the task(s) at hand. Students will also learn to evaluate the effectiveness of visualization designs, and think critically about each design decision, such as choice of color and choice of visual encoding. Students will create their own data visualizations, and learn to use Open Source data visualization tools, especially D3.js. Students will also read papers from the current and past visualization literature and create video presentations of their findings.

DSC 704

Distributed Data Engineering

This course will deal with the fundamental issues in large distributed database systems which are motivated by the computer networking and distribution of processors, and control. The theory, design, specification, implementation, and performance large systems will be discussed. Concurrency, Consistency, Integrity, Reliability, Privacy, and Security in distributed database systems will be included. A special feature of the course includes interesting problems in Mobile Ad hoc networks and Cloud Computing that can benefit from research ideas in distributed database systems. Research related to Mobile Computing, Streaming databases, Video conferencing, Peer to Peer systems, Cloud computing will be covered.

DSC 705

Deep Learning and Data Analysis

In this course builds from a one node neural network to a multiple features, multiple output neural networks. All the steps are explained using working code to solve problems. After an understanding of how neural networks work and the parameters that control deep learning systems, Keras is introduced and used to simplify the building of deep learning neural networks. A convolutional deep learning neural network is built using Keras to show how deep learning is used in specialized neural

networks. This course provides the necessary required background to understand ROI's Time Series Analysis and Natural Language Processing courses.

DSC 706

Unstructured Data Processing

This course applies the skills and technology of data science to text mining and explores unstructured data generally. Most data stored and created today is unstructured. Unstructured data is data that is not stored in a regularized way such as a relational database or a series of key-value pairs. Common examples of unstructured data include text, images and video. In this course we'll focus principally on text data.

CSC 746

Advanced Data Mining

The course will cover both basic and advanced data mining techniques in depth. The course will consist of a mixture of lectures by the instructor and presentations by the students. Each student is also expected to gain hands on experience by carrying out a semester long project on their topic of choice.

CSC 747

Text Mining

This course will cover the major techniques for mining and analyzing text data to discover interesting patterns, extract useful knowledge, and support decision making, with an emphasis on statistical approaches that can be generally applied to arbitrary text data in any natural language with no or minimum human effort. Detailed analysis of text data requires understanding of natural language text, which is known to be a difficult task for computers. However, a number of statistical approaches have been shown to work well for the "shallow" but robust analysis of text data for pattern finding and knowledge discovery. You will learn the basic concepts, principles, and major algorithms in text mining and their potential applications.

EET 710

Advanced Computer Networks

The area of computer networking is undergoing rapid development; it's important to focus not only on what computer networks are today, but also on why and how they are designed the way they are. The aim of this course is to provide a sound conceptual grounding to computer networks and its design principles. In this course, we will study the fundamentals of building scalable computer networks. We will go through the thought-process that went into designing the Internet---which is the best example of a computer network that has adapted and scaled to changing environment.

EET 702

Advanced Network Security

The objective of this course is to expose students to advanced topics in network security. Topics covered will include network security issues like authentication, anonymity, traceback, denial of service, encryption, forensics etc. in both wired and wireless networks. At the conclusion of the course, students will be expected to get a clear and in-depth understanding of state of the art in network security attacks and defenses.

EET 713

Advanced Network Design

In this course students will be able to plan, design, configure, test and troubleshoot both local area networks and wide area networks. They will gain knowledge thorough switching, routing concepts and practical knowledge of the use and configuration of network elements such as routers and

switches. Students will also be able to effectively administer both local area networks and wide area networks.

EET 716

Advanced Topics in Wireless Networking and Communication

This course will cover the latest research in the area of wireless networking, concentrating mainly on mobile ad hoc and sensor networks. Topics will include media access control, routing, flow control and cross-layer architectures. Issues such as quality of service (QoS), energy conservation, reliability and mobility management will be discussed. Students will be required to complete a semester-long research project related to the theme of this course.

EET 718

Network Performance Evaluation

The Science of Network Performance Evaluation, Experimental/ Empirical Network Performance Evaluation, The Art of Network Performance Evaluation, Modeling and Simulation based Network Performance Evaluation

EET 761

Network Protocols and Standards

A rigorous course covering the principles, standards, and practices of data communications protocols with emphasis on the TCP/IP protocol suite. The topics will include: reference model, Network Access layer protocols, Internet layer protocols, Transport layer protocols, and Application layer protocols.

EET 705

Broadband Technologies and Components

This course helps the students to understand the everincreasing market for FTTx networks, PON and HFC transmission and the infrastructure components involved. It looks at fiber types, connectors, apparatus, termination, design, losses, installation, planning, inspection and testing, to provide a broad education on all areas of Broadband Access and FTTx infrastructures.

EET 726

Advanced Internet Technologies

To provide an in-depth understanding of selected Internet protocols (especially at the transport layer) including the Transmission Control Protocol (TCP) and to gain more advanced modelling and analysis skills required for the rigorous design of practical protocols via a structured project. Secondly, to provide some breadth of understanding of selected computer networking topics via guest lectures. The aim is to build on the foundations provided by the prerequisite courses.

EET 850

Wireless Sensor Networks

In this course we will provide an introduction to Wireless Sensor Networks (WSN) and cover latest topics in WSNs. The goal of this course is to give an overview of fundamental problems in the area of WSNs. We will discuss existing solutions for some of these problems. Data aggregation, information dissemination, security issues, power management, localization, topology control, routing, naming, collaborative signal and information processing for target tracking, security, are some ofthe topics that will be covered in this course. In this course, students will be assigned labs (Ubiquitous Computing related applications) that will involve implementation on Micaz motes, from Crossbow, and other mobile wireless sensors using a light weight event driven operating system called Tinyos. Most of the materials covered will be from recent research work in wireless sensor networks

EET 851

Mobile and Ad hoc Networks

This course covers major aspects of ad hoc networks, from design through performance issues to application requirements. It starts with characteristics features, applications of ad hoc networks, Modulation techniques and voice coding. It also covers the IEEE 802.11 Wireless LAN and Bluetooth standards.

ISC 721

Advanced Cryptography and Cryptanalysis

The abilities to protect the confidentiality of information, to prevent unauthorized access to data or services, and to prevent the unauthorized modification of data are fundamental elements of security. Similarly, the ability to know who you are talking to and where something has come from, and to be able to bind parties to previous commitments or actions, is essential for trust. This course will introduce the main types of cryptographic techniques, explain how different cryptographic techniques provide different security services and identify some key issues relating to the management of these services.

ISC 731

Information Security Management

This course is designed to teach the fundamentals of security management. The course is not technical in nature, but relies on the student's previous understanding of security systems. The course instead looks at security from a managerial perspective with regards to design, implementation, maintenance, and disaster recovery.

ISC 733

Information Hiding

Basic steganography definitions. Examples of hiding in digital images, both spatial and transform domain. Simple detection, advantages and disadvantages of various embedding operations. Hamming codes and wet paper codes, and their applications to hiding. Detection of hidden data via feature vectors, countermeasures. Theory of hidden information: the square root law in the case of i.i.d. discrete sources. Steganography and steganalysis with multiple sources.

ISC 734

Wireless Network Security

This course presents network security protocols and cryptographic communication mechanisms for realizing specified security properties in wireless and mobile networks, such as secrecy, integrity, authentication, privacy, crypto key distribution, and access control. The course will study a selection of security functionalities and principles, adapted from current best practice in personal area networks, local area networks, and global mobile networks. In addition, we seek to include interesting security protocols and mechanisms emerging in the Internet developments.

ISC 735

Cloud Computing Security

The course delves deep into the secure cloud architectural aspects with regards to identifying and mitigating risks, protection and isolation of physical & logical infrastructures including compute, network and storage, comprehensive data protection at all OSI layers, end-to-end identity management & access control, monitoring and auditing processes and meeting compliance with industry and regulatory mandates. The course will leverage cloud computing security guidelines set forth by ISO, NIST, ENISA and Cloud Security Alliance (CSA).

ISC 736

Cyber Warfare

The main objectives of the course are to provide students with the appropriate theoretical foundations on the main cyber warfare concept, expose students to practical techniques that aim in exploiting, attacking, and defending computer networks, provide a comprehensive view of cyber warfare from the technical, legal, and regulatory perspectives, present the deployment of cyber warfare activities at national levels and expose students to the social, ethical, legal, and political aspects of cyber warfare.

ISC 737

Computer and Network Forensics

The knowledge of computer and network forensics has become essential in securing today's network-centric computing environment. This new course will give the students both the fundamental knowledge and hands-on practice on computer and network forensics. The added exposure to forensics will enhance the marketability of our students and serve the students who carry the skills

and knowledge forward into their future careers. Upon completing this course, the students are expected to understand the basics of computer and network forensics, to be well-trained as next-generation computer crime investigators, and to be prepared for active research at the forefront of these areas.

ISC 738

Ethical Hacking

This course demonstrates the ethical use of various "white hat" cyber penetration testing tools and techniques consistent with Ethical Hacking training. Network tools and techniques take place in an enclosed "sandbox" environment. Students are exposed to various computer hacking skills and analyze various protective measures and their effectiveness.

ISC 739

Cyber Crimes and Laws

A computer can be the means, target of, or the source of information about a crime, and increasingly, those interested in all aspects of criminal law must have some working knowledge of computer crime to effectively investigate, prosecute, and defend cases. This course will explore the policy and law of computer crime and consider how "cybercrimes" are different from and similar to transgressive behavior in physical space. Topics will include the Fourth Amendment, forensics, electronic surveillance, cyberbullying, identity theft, computer hacking and cracking, espionage, cyberterrorism, privacy, the era of "forced disclosure," and the challenge of cross-jurisdiction enforcement.

ISC 740

Quantum Cryptography

In this course, students will learn how to use quantum effects, such as quantum entanglement and uncertainty, to implement cryptographic tasks with levels of security that are impossible to achieve classically.

ISC 741

Algebraic Cryptanalysis

The course is targeted at students with interest in algorithmic problems in algebra or group theory and applications to cryptography. At the beginning of the course all notions related to group theory will be covered.

ISC 742

Intrusion Detection and Prevention

IDS/IPS definition and classification -Basic elements of attacks and their detection -Misuse detection systems (search algorithms and applications in IDS) -Anomaly detection systems (machine learning basics: principles, measures, performance evaluation, method combinations, basics of artificial neural networks, clustering (hierarchical and partitional) and supervised learning in IDS) -Testing IDS and measuring their performances -Computational complexity-theoretic and information-theoretic IDS models and quality criteria -Intrusion detection in virtual networks.

ISC 743

Penetration Testing and Vulnerability Analysis

This advanced course introduces students to Penetration Testing and Vulnerability Analysis. It will cover in-depth methodologies, techniques, and tools to identify vulnerabilities, exploit, and assess security risk to networks, operating systems, and applications. The course goals will be to get students to have the knowledge so students may think and work like a successful ethical penetration tester

CSC 720

Advanced Operating Systems

Advanced Operating Systems is a graduate-level course that addresses a broad range of topics in operating system design and implementation, including Operating system structuring, Synchronization, communication and scheduling in parallel systems, distributed systems, their communication mechanisms, distributed objects and middleware, Failures and recovery management and System support for Internet-scale computing. By tracing the key ideas of today's most popular systems to their origins in research, the class highlights key developments in operating system design over the last two decades and illustrates how insight has evolved to implementation.

CSC 758**Parallel Processing**

Despite the extraordinary advances in computing technology, we continue to need ever greater computing power to address important fundamental scientific questions. Because individual compute processors have essentially reached their performance limits, the need for greater computing power can only be met through the use of parallel computers. This course is intended for students who are interested in learning how to take advantage of parallel and distributed computing with the focus of writing parallel code for processor intensive applications to be run on clusters, the grid, the cloud, or shared infrastructure. The objectives of this course are to give the students an understanding of how they can use parallel computing in their research and enable them to write parallel code for their high-performance computing applications. Extensive use of pertinent and practical examples from scientific computing will be made throughout. The programming languages used will be Matlab, Maple, sage, python, Fortran, or C. Both the shared and distributed paradigms of parallel computing will be covered via the OpenMP and MPI libraries.

CEN 707**Advanced Distributed Systems**

This is a graduate course in distributed systems covers the foundations of distributed systems and their modern, practical applications. Topics will include logical time, consistency, transactions, fault tolerance, quorums, replicated state machines, atomic commit, Paxos, peer-to-peer systems, and the Google and Facebook stacks.

CSC 752**Advanced DBMS**

The course presupposes a basic knowledge of conceptual modelling for data base systems and implementation using relational DBMS and SQL. The course aims to a more profound understanding of database theories, models, and methods and an ability to use these in different situations.

CSC 753**Distributed Databases**

The course has dual objectives. The first is an in-depth study of the classical distributed database management issues such as distribution design, distributed query processing and optimization, and distributed transaction management. The second objective is to study more current distributed database management topics such as pervasive computing, Web data management, different distribution models (push versus pull), interoperability and componentization, and data mining on the web.

CSC 754**Object Oriented Databases**

The need of Object-Oriented databases, Basics of databases; as a revision, Features of Object-Orientation, Object-Oriented data models, Object-Relational DBMSs, Object-Oriented Database Management Systems (OODBMSs), Features of OODBMSs, Different OODBMSs, Research issues in OODBs.

CSC 755**Web based DBMS**

A modern introduction to designing and creating web-based applications. The course covers client-server architecture, database fundamentals and the principles behind writing software that functions over networks. Widely used web development languages and environments are compared and will be used by students to implement their own applications.

CSC 756

Multimedia Databases

This course aims to provide a basic study of the development of fundamental multimedia database systems, as well as applicable technologies for developing web-based multimedia applications. The former provides a basis for understanding the basic concepts and techniques pertinent to multimedia databases. The latter provides an in-depth study of more sophisticated technologies, many of which are concerned with: (a) suitable data modeling capabilities within databases; (b) defining and manipulating multimedia data; (c) multimedia indexing and content-based retrieval techniques; (d) multimedia database architecture, and (e) extending the database system functionality for multimedia applications. In this course, we will study issues concerning both the traditional and modern database systems and technologies for multimedia data management.

CSC 760

Advanced Data Warehousing

This course provides advanced concepts of data warehouse design. Topics in data modeling, database design and database access are reviewed. Issues in data warehouse planning, design, implementation, and administration are discussed in a seminar format. The role of data warehouse in supporting Decision Support Systems (DSS) is also reviewed.

CSC 781

Cloud Computing

Cloud Computing has transformed the IT industry by opening the possibility for infinite or at least highly elastic scalability in the delivery of enterprise applications and software as a service (SaaS). Amazon Elastic Cloud, Microsoft's Azure, Google App Engine, and many other Cloud offerings give mature software vendors and new start-ups the option to deploy their applications to systems of infinite computational power with practically no initial capital investment and with modest operating costs proportional to the actual use. The course examines the most important APIs used in the Amazon and Microsoft Cloud, including the techniques for building, deploying, and maintaining machine images and applications. We will learn how to use Cloud as the infrastructure for existing and new services. We will use open source implementations of highly available clustering computational environments, as well as RESTful Web services, to build very powerful and efficient applications. We also learn how to deal with not trivial issues in the Cloud, such as load balancing, caching, distributed transactions, and identity and authorization management. In the process we will also become very familiar with Linux operating system.

SEN 761

Semantic Web

Semantic Web is an extension of the World Wide Web through standards by the World Wide Web Consortium (W3C). The standards promote common data formats and exchange protocols on the Web, most fundamentally the Resource Description Framework (RDF). According to the W3C, "The Semantic Web provides a common framework that allows data to be shared and reused across application, enterprise, and community boundaries". The term was coined by Tim Berners-Lee for a web of data that can be processed by machines — that is, one in which much of the meaning is machine-readable. In this course we will these W3C standard languages and research directions.

SEN 764

Ontology Engineering

Ontologies are explicit specifications of information models and their semantics in formats that are interpretable by humans and computers. The course introduces the philosophical and logical foundations of ontologies and surveys formalisms, modern languages and methods for designing,

analyzing and using ontologies. The stages of ontology development from conceptual design to ontology evaluation and verification are studied and practiced using concrete domains.

CSC 757

IP Multimedia System

This course provides an understanding of the IP Multimedia Subsystem's (IMS) role in Next Generation Networking. It provides a detailed description of the IMS architecture including security, charging and Policy and Charging Control (PCC). Additionally it identifies the main protocols associated with IMS including SIP, Diameter and SDP and analyzes their role in the IMS registration and session control procedures. It also provides a brief look at some of the applications enabled by the IMS.

SEN 754

Advanced Web Computing System and Application

The World Wide Web and its underlying technologies are increasingly gaining importance for the development of interactive Web applications. This course introduces concepts, principles and methods in current client and server-side Web technologies. Basic Web technologies such as HTML, HTTP, CSS, XML, JavaScript etc. are a prerequisite to take this course. The focus of this course is rather on advanced topics in emerging Web technologies. These include extensions of Web standards, combination of different Web technologies, Web toolkits and development environments, current backend Web frameworks (e.g. Node & Express, Django, Ruby on Rails), and frontend Web frameworks (e.g. Angular, React, Vue.js, Ember.js, Meteor). This course follows a student-centered, project-based learning approach. Web technologies will be proposed and presented in the lecture by student groups. The presented technologies are further investigated and applied in hands-on sessions as well as small student projects carried out throughout the course.

GSC 700

Advanced Engineering Mathematics

The course applies advanced mathematical tools to solve electrical engineering problems. Mathematical tools include vector analysis, matrices, different coordinate systems, multivariate differential equations, Laplace transforms, Fourier analysis, and Dirac delta functions.

CEN 720

Advanced Computer Architecture

Advanced concepts of computer architecture. Intel x86, ARM and RISC-V architecture will be covered. The instruction set characteristics, functions, addressing modes and formats will be covered. Also covered will be pipelining and branch prediction algorithms, internal memory and advanced concepts of cache memory. Furthermore, Instruction level parallelism, superscalar processor, parallel processing and multicore computers concepts will be discussed.

CEN 708

Advanced System Modeling and Simulation

This course provides in-depth exposure to the field of modeling and simulation (M&S) from the perspective of M&S as an essential tool for systems engineering. Advanced statistical methods are used to conduct requirements-driven simulation analysis and experimentation. The course provides treatment of advanced M&S topics, including verification, validation, and accreditation techniques; methods for simulation interoperability and compositability; modeling of the system environment, both natural and man-made; modeling of system costs; and the establishment of collaborative M&S environments. The course also explores continuous and real-time simulation. Students are exposed to the techniques used to form conceptual models of mechanical (both translational and rotational), electrical, fluid, thermal, biological, and hybrid systems. The conceptual models are transformed into mathematical models and implemented in a modern simulation package. State-of-the-art tools are explored, and each student is given the opportunity to conduct a simulation study of a complex system. Each student will present a case study and complete a project. Upon completion of the

course, the student will be able to conduct or lead the development of the model of a complex physical system, model the input data, and analyze the results to support decisions at key milestones of a system's life cycle.

SEN 720

Advanced Human Computer Interaction

This course explores the theory, design procedure, programming practices, and evaluation methods in Human Computer Interaction (HCI), with a particular focus on input and interaction techniques. It introduces students to recent developments in the area and provides them with the methods to design, develop, and evaluate existing or novel interactive systems.

SEN 723

Formal Methods and Specifications

Introduction to FMs used in software engineering. Elements of discrete mathematics, formal mechanisms for specifying and verifying the correctness, reliability and efficiency of software systems, finite state machines, regular expression, assertions, algebraic and model based specification techniques including case studies (prerequisites include knowledge of modern programming languages, data structures, algorithms and discrete structures).

SEN 751

Human Aspects in Software Engineering

This course will investigate the research on the human aspects of software development. The focus will primarily be on individual software development, such as what is known about people programming, debugging, testing, and understanding code. We will cover studies of programmers, and tools that have been shown to be effective for programmers. This will include what is sometimes called "Empirical Studies of Programmers" and the "Psychology of Programmers". Topics that are associated with Human Aspects of Software Engineering, such as the study of processes for management, studies of large groups of programmers, and software specifications, will only be covered lightly.

SEN 753

Power Aware Computing

The purpose of this course is to cover a variety of aspects related to energy aware computing. While it is recognized that power consumption has become the limiting factor in keeping up with increasing performance trends, static or point solutions for power reduction are beginning to reach their limits. This course is intended to provide an insight into how various power reduction techniques can be used and orchestrated such that the best performance can be achieved within a given power budget, or the best power efficiency can be obtained under prescribed performance constraints. The paradigm of energy aware computing is intended to fill the gap between gate/circuit-level and system level power management techniques, by providing more power management levels and application-driven adaptability.

SEN 755

Service Oriented Computing

Concepts, theories, and techniques for Web services. This course examines architectures for Web applications based on the classical publish, find, and bind triangle, but formulates it at a higher level. It considers sophisticated approaches for the description, discovery, and engagement of Web services. This course emphasizes Web service composition. Key topics include semantics, transactions, processes, agents, quality of service, compliance, and trust.

SEN 756

Advanced Usability Engineering

This course emphasizes cost-effective methods that developers can implement immediately, and instructs students about which methods to use when, throughout the development lifecycle. Also

includes strategies to avoid the four most frequently listed reasons for delay in software projects, detailed information on how to run a usability test, and an extensive bibliography allowing students to find additional information.

SEN 758

Component based Software

Component-based software engineering is a paradigm that aims at minimizing the complexity of developing and managing modern software through the use of reusable pieces of software called “software components”. The objective of the course is to give the students the fundamental knowledge in developing component-based software systems out of the latest research trends in the domain. Further, the course gives a deeper understanding in a sub-topic that is selected by the students. Students will be trained in identifying relevant information, summarizing, reporting and presenting the information, and also in using critical thinking to support their argumentation.

SEN 759

Software Re-Engineering

This course explains and applies best practices to analyze and understand existing software systems; Use heuristics and tools to detect shortcomings in the design and implementation of software systems; Apply tests and re-factoring techniques to systematically remove the shortcoming and forward engineering techniques to re-built the software for fitness of purpose.

SEN 760

Complex Adaptive Systems

A graduate introduction to selected topics in the field of complex adaptive systems, including: definitions of complexity, cellular automata, dynamical systems, genetic algorithms, computer immune systems, and artificial life. The course will emphasize computational tools to measure, simulate and analyze complexity in exemplar complex systems. Because New Mexico is a center of research in complex adaptive systems, there may be guest speakers throughout the semester. Programming and mathematical maturity or permission of instructor required.

SEN 763

Advanced Software Engineering

This course aims to equip students to develop techniques of software-intensive systems through successful requirements engineering, design, testing, maintenance and evolution, and project and quality management. Students build on their basic software engineering knowledge by extending it with specific techniques for maintenance, evolution, dependability, reliability, safety, security, and resilience.

SEN 812

Agile Methods

Agile methods are rapidly becoming the choice for software development where requirements are unpredictable or is expected to change over time. This course will help you gain knowledge on what is agile and Why agile is better suited for these situations and will also cover some of the most common agile frameworks like scrum and XP in depth.

SEN 813

Advanced Software Requirements Engineering

Requirements engineering (RE) refers to the process of defining, documenting and maintaining requirements to the sub-fields of systems engineering and software engineering concerned with this process

SEN 814

Ubiquitous Computing and Interaction

The course introduces students to the general topics of ubiquitous and pervasive computing and is particularly focused in systems and applications for Ambient Intelligence. At the end of this course, students should be able to create systems that explore the enormous innovation potential raised by the increasingly pervasive presence of information technologies in all aspects of our everyday life.

This corresponds to an emerging need in the market for people that are skilled in designing, developing, deploying and evaluating Ambient Intelligence systems.

SEN 815

Verification and Validation

This course focuses on software verification and validation throughout the software life cycle. Topics covered in this course will include reviews, inspections, formal verification, testing techniques, and testing frameworks.

SEN 817

Information Retrieval

The explosive growth of available digital information (e.g., Web pages, emails, news, scientific literature) demands intelligent information agents that can sift through all available information and find out the most valuable and relevant information. Web search engines, such as Google, Yahoo!, and MSN, are several examples of such tools. This course studies the basic principles and practical algorithms used for information retrieval and text mining. The contents includes: statistical characteristics of text, several important retrieval models, text categorization, recommendation system, clustering, information extraction, etc. The course emphasizes both the above applications and solid modeling techniques (e.g., probabilistic modeling) that can be extended for other applications.

SEN 816

Middleware For Networked and Distributed Systems

This course introduces students to lower-level aspects of computer networking such as: wiring and protocols; LAN technologies; WAN protocols and techniques (e.g. routing, IP, TCP and UDP) underpinning internets. An examination of the concepts, theory and practice of software development in distributed environments follows. The basic foundations for distributed computing are presented. These topics are then expanded to cover the advanced distributed system programmer support provided by middleware. Examples involving commercial distributed computing environments are included to illustrate the decisions and techniques made by designers of distributed software systems.

EET 703

DSP Application in Telecommunication

This course provides an introduction to processing of discrete-time (DT) signals. Fundamental principles of DT systems and signals, in both time and Fourier domains, are presented. These are followed by modern applications of digital signal processing (e.g telecommunications). Throughout the course, the focus is on developing techniques and algorithms for solving discrete-time signal processing problems.

EET 706

Advanced Optical Fiber Networks

Topics include advanced chromatic dispersion compensation, PMD compensation and the nonlinearity management. The spectral efficiency limits will be described and techniques to achieve it, such as turbo equalization, forward error correction (FEC), and coded modulation. Advanced modulation formats, such as various multilevel modulations and OFDM, and constrained coding techniques suitable to deal with fiber nonlinearities will be presented. Further, the spatial-domain based multiplexing and modulation will be studied. The physics behind parametric amplification will be presented as well as its application to all-optical regeneration, wavelength conversion, and multibanded switching. Other topics include soliton and dispersion-managed soliton transmission.

EET 707**Telecommunications Business Environment**

This course aims to give you an appreciation of the external environment in which a telecommunications business operates, as well as an understanding of how a company can successfully conduct business in this environment.

EET 751**Antenna and Microwave Engineering**

This course provides you with in-depth know-how of microwave engineering and antennas. The course combines both passive and active microwave circuits as well as antenna systems. Future applications, like millimeter-wave 5G/beyond-5G wireless communications or automotive radar, require experts that can co-design highly integrated antenna systems that include both antennas and microwave electronics and will provide you with the required theoretical foundation as well as hands-on experience using state-of-the-art design tools.

EET 756**Telecommunication Switching Systems**

This subject aims at introducing to the students the knowledge about the telecommunication industry: its services and market, the theoretical basis about performance (queuing theory) and operation (multiplexing, switching, routing, and signaling) in telecom networks.

EET 765**Radio Frequency Engineering**

This course introduces the advanced concepts of RF Engineering. It covers a broad range of topics around RF devices and systems. The course illustrates how different building blocks such as amplifiers, oscillators and mixers, as well as guiding structures including transmission lines and waveguides, work together to build RF transmitters and receivers. It introduces important parameters and concepts related to these components, such as scattering matrices, impedance matching and non-linearities. The course shows how the electromagnetic theory applies to RF systems, and is a pathway towards more advanced courses on antennas & propagation and telecommunications.

ESC 703**Advanced Qualitative Research Methods**

This course will provide students with the knowledge, insights and techniques relating to the more advanced aspects of qualitative research. This will include providing students with a comprehensive understanding of the theoretical perspectives within qualitative research designs, specific qualitative methodologies and analyses, advanced data collection methods and complex issues in qualitative research (e.g. critical appraisal). Students will be taught the knowledge and skills needed to critically engage with complex concepts relevant to the more advanced aspects of qualitative research.

ESC 704**Advanced Quantitative Research Methods**

This topic aims to prepare students to select and employ appropriate analytical procedures for the examination of data collected in surveys, quasi-experimental research studies and longitudinal studies as well as to draw appropriate conclusions and interpret the research findings from such studies. The course concentrates on an understanding of and on the use of the analytical procedures of linear regression, path analysis, multiple regression, factor analysis, cluster analysis, analysis of variance and covariance, partial least squares path analysis, and structural equation modelling using SPSS, AMOS and LISREL. In addition, the problems of multilevel analysis are examined and an understanding and experience in the use of the analytical procedure of hierarchical linear modelling is provided both for studies of growth and of school and classroom effects. The HLM and MPlus programs are introduced as appropriate procedures for multilevel analysis. The implications of the

choice of a particular multivariate analytical procedure for the design of quantitative research studies in the social and behavioural sciences are considered.

ESC 705

Critical Review of Literature

This course is designed to train students in the conduct of a systematic literature review and developing the skills to conduct a review built on the framework of evidence-based practice, an increasingly important standard in the arena of literature reviews.

ESC 701

Research Methodology

The problem-solving research uses applied research to find solutions to the existing problems. Qualitative Research: Qualitative research is a process that is about inquiry that helps in-depth understanding of the problems or issues in their natural set.

DEVIATIONS FROM BS ENVIRONMENTAL SCIENCES APPROVED ROADMAP BY BUKC**Intake Spring 2019****Semester – 2**

S No	Course Code	Course Title	Credit Hours
1	CHM 105	Chemistry	3
2	ENG 104	English -II	3
3	MAT 115	Calculus & Analytical Geometry	3
4	GEO 110	Fundamental of Geography & Geomorphology	3
5	ENV 105	Introduction to Environmental Sciences	3
6	ENV 110	Environmental Biology	3
7	MAT105	Mathematics*	0
Total Credit Hours			18

* Course offering additional to approved Roadmap

Semester – 3

S No	Course Code	Course Title	Credit Hours
1	ENG 232	Oral Communication	3
2	HSS 107	Introduction to Psychology*	3
3	MAT 205	Statistics	3
4	ENV 210	Environmental Chemistry	3
5	ENV 205	Fundamentals of Ecology	3
6	ENV 230	Environmental Issues	3
Total Credit Hours			18

* Course approved for 4th semester covered in 3rd semester, as replacement of approved course
HSS 111 Introduction to IR/ Humanities

Semester – 4

S No	Course Code	Course Title	Credit Hours
1	ENV 215	Social Theory of Environment	3
2	ENV 220	Environmental Microbiology	3
3	ENV 225	Applied Ecology	3
4	ENV 236	Introduction to Climate Change	3
5	ENV 245	Introduction to Oceanography	3
6	HSS 201	Introduction to Anthropology *	3
Total Credit Hours			18

*Course not contained in approved Roadmap

Intake Fall 2019Semester 3

S No	Course Code	Course Title	Credit Hours
1	ENG 232	Oral Communication	3
2	ENV 210	Environmental Chemistry	3
3	ENV 205	Fundamentals of Ecology	3
4	ENV 230	Environmental Issues	3
5	ENV 245	Introduction to Oceanography*	3
6	HSS 201	Introduction to Anthropology**	3
Total Credit Hours			18

* Course approved for 4th semester covered in 3rd semester; swapped with **MAT 205 Statistics**

** Course not contained in approved Roadmap; offered as replacement of approved course

HSS 111 Introduction to IR/ Humanities

Semester 4

S No	Course Code	Course Title	Credit Hours
1	ENV 215	Social Theory of Environment	3
2	ENV 220	Environmental Microbiology	3
3	ENV 225	Applied Ecology	3
4	HSS 107	Introduction to Psychology	3
5	ENV 236	Introduction to Climate Change	3
6	MAT 205	Statistics*	3
Total Credit Hour			18

* Course approved for 3rd semester covered in 4th semester; swapped with

ENV 245 Introduction to Oceanography

Intake Spring 2020 & Fall 2020**Semester 1**

S No	Course Code	Course Title	Credit Hours
1	PAK 101	Pakistan Studies	2
2	ISL 101	Islamic Studies	2
3	ENG 103	English I	3
4	MAT105 BIO 105	Mathematics OR Fundamentals of Biology	0
5	CSC 105	Introduction to Computers	3
6	PHY 101	Physics	3
7	ENV 105	Introduction to Environmental Sciences*	3
Total Credit Hours			16

* Course approved for 2nd semester covered in 1st semester; swapped with
GEO 105 Physical & General Geology

Semester 2

S No	Course Code	Course Title	Credit Hours
1	CHM 105	Chemistry	3
2	ENG 104	English -II	3
3	MAT 115	Calculus & Analytical Geometry	3
4	GEO 110	Fundamental of Geography & Geomorphology	3
5	ENV 110	Environmental Biology	3
6	GEO 105	Physical & General Geology*	3
Total Credit Hours			18

* Course approved for 1st semester covered in 2nd semester; swapped with
ENV 105 Introduction to Environmental Sciences

REVISION OF CURRICULUM - MS COMPUTER ENGINEERING

Vision Statement of the Department:

The Computer Engineering Department is committed to prepare students for professional and research activities with an ability to learn independently, within a diverse multi-cultural environment, and enabling them to become global leaders in their respective fields.

Mission Statement of the Program:

The mission of the Master of Science in Computer Engineering program is to educate graduates by enhancing their knowledge of computer engineering with theory, practice and research to cater technological advances for the betterment of society.

Program Educational Objectives:

The educational objectives of MSCE program are stated as below:

1. Ability to apply theoretical and practical knowledge to solve challenging problems in their professions.
2. Ability to engage in life-long learning for personal and societal growth.
3. Ability to demonstrate effective interpersonal skills as an individual or in a team.

Learning Outcomes of the Program:

The MSCE program prepares students to attain the educational objectives by ensuring that students demonstrate achievement of the following learning outcomes. Students should be:

1. Able to provide solutions of complex engineering problems using computer engineering knowledge, methodologies and principles.
2. Able to understand research aspects of computer engineering and its allied domains.
3. Able to communicate effectively, in both oral and written form.
4. Able to recognize importance of technological developments and pursue lifelong learning.

Admission Eligibility Criteria:

HEC recognized 4 years Bachelor's Degree or equivalent in a relevant computing discipline (Computer Engineering, Computer Science, IT, Software Engineering, Electrical Engineering, Electronics Engineering, Information Systems & Informatics or equivalent) with a minimum CGPA of 2.5/4.0 or 50% marks where CGPA is not given. The following courses (or equivalent) are pre-requisite for the MS Computer Engineering program:

1. Operating System or equivalent
2. Digital Logic Design or equivalent
3. Computer Architecture and Organization or equivalent
4. Differential Equation or equivalent

Students shall be required to complete the deficiency courses (as mentioned above) if required. Applicants must also provide HEC verification of all academic degrees and transcripts as per BU rules.

MS Computer Engineering Roadmap
Bahria University, Islamabad

Campus:	BUIC
Department:	Computer Engineering
Program Title:	MS Computer Engineering
Program Level:	Postgraduate
Duration of Program:	2 Years
Number of semesters:	4 Semester
Total Credit Hours	30

Semester-1

S.No.	Course Code	Course Title	Credit Hours
1		Core - I	3
2		Core - II	3
3	ESC 701	Research Methodology	3
Total Credit Hours			9

Semester-2

S.No.	Course Code	Course Title	Credit Hours
1		Core - III	3
2		Elective - I	3
3		Elective - II	3
Total Credit Hours			9

Semester-3

S.No.	Course Code	Course Title	Credit Hours
1		Elective - III	3
2		Elective - IV / Thesis - I	3
Total Credit Hours			6

Semester-4

S. No.	Course Code	Course Title	Credit Hours
1		Elective - V	3
2		Elective - VI / Thesis - II	3
Total Credit Hours			6

Core Courses

S. No.	Course Code	Course Title	Credit Hours
1	CEN 524	Advanced Digital Design	3
2	CEN 520	Advanced Computer System Architecture	3
3	CSC 720	Advanced Operating Systems	3
Total Credit Hours			9

LIST OF ELECTIVE COURSES

S. No.	Course Code	Course Title	Credit Hours
1	CSC 751	Pattern Recognition	3
2	CSC 764	Computer Vision	3
3	CSC 719	Machine Learning	3
4	CSC 711	Advanced Artificial Intelligence	3
5	CSC 765	Bio Medical Image Analysis	3
6	CEN 745	Advanced Digital Image Processing	3
7	CSC 518	Decision Support Systems	3
8	CEN 740	Advanced Embedded Systems	3
9	CEN 525	Digital Signal Processing & Applications	3
10	CEN 707	Advanced Distributed Systems	3
11	CEN 553	Real Time Computer Systems	3
12	CSC 758	Parallel Processing	3
13	CEN 752	Advanced VLSI System Design	3
14	CEN 541	ASIC and FPGA Design	3
15	CEN 721	Advanced Microprocessor Systems	3
16	CEN 753	Design of Real Time Embedded Systems	3
17	CSC 502	Information Systems	3
18	EET 710	Advanced Computer Networks	3
19	EET 511	Digital Communication Systems	3
20	EET 556	Mobile Communication & Networking	3
21	EET 548	Mobile Cellular Systems and Standards	3
22	EET 554	Wireless Networks	3
23	EET 755	Wireless Communication Techniques	3
24	EET 555	Wireless and Mobile Communications	3
25	EET 702	Advanced Network Security	3
26	EET 553	Information Theory and Coding	3
27	EET 519	Distributed Networking	3
28	EET 520	Network Administration & Management	3
29	EET 706	Advanced Optical Fiber Networks	3

30	EET 711	Advanced Digital Communications	3
31	EET 769	Mobile/Vehicular Ad Hoc Networks	3
32	GSC 700	Advanced Engineering Mathematics	3
33	EEN 510	Stochastic Processes	3
35	CSC 704	Advanced Cryptography	3
36	SEN 762	Advanced Big Data Analytics	3
37	DSC 707	Deep Learning	3
38	CSC 781	Cloud Computing	3
39	ISC 737	Computer and Network Forensics	3
40	SEN 774	IoTs Architecture, Protocols & Applications	3

Course Outlines**Course Title: Advanced Operating Systems****Course Code: CSC 720****Credit Hours Theory: Three (3)****Course Outline:**

The operating systems course is of prime importance in the curriculum of any graduate or undergraduate program in computer engineering. This course deals with advance concepts with relevance to the graduate level study. It has been designed using references of similar courses being offered at accredited universities. The intension is to deliver the state of art operating system concepts ranging from embedded micro kernels to popular platforms like LINUX, SOLARIS, Windows 2000 and XP. The internals, architecture, device driver writing and the distributed processing support on multi-processor systems are the focus of course

Text Book: Operating System Concepts.**Author:** Abraham Silberschatz, Greg Gagne

NEW LAUNCH PROPOSAL - BACHELOR OF SCIENCE IN PROJECT AND SUPPLY CHAIN MANAGEMENT

A. ACADEMIC DETAILS	
1	Faculty/Department: Management Studies, BU1C
2	Name of the Program: BS Project and Supply Chain Management
3	Mission of the Program: BS Project and SCM is to provide participants with cutting-edge knowledge, skills, and expertise in developing and managing Projects and supply chain functions in modern corporate world.
4	Objectives of the Programme: <ul style="list-style-type: none"> ✓ are well versed with the role of Project and Supply Chain Management in real corporate world ✓ understand the tools and techniques required to Manage projects and optimize Supply Chain functions
5	Outcomes of the Programme: <p>On successful completion of Graduates of BS (P&SCM) will be able to:</p> <ul style="list-style-type: none"> ✓ Demonstrate their knowledge in the major areas of Project and supply chain Management. ✓ Understand the changing role of Project and supply chain management in global business environment. ✓ Understand ethical and legal frameworks for business. ✓ Realize the role of other organizational functions in the success of project and supply chain. ✓ Assimilate knowledge and technology in understanding and solving business problems.
6	Rationale for the Programme:
7	<p>The program has been designed to meet the expected manpower requirement for fast moving globalization and particularly the impact of CPEC scenario on the local job market. Near future will witness the growth of small and large project of different kinds not only on the route of the CPEC but growth of auxiliary industry in small and big cities of Pakistan. The economic development initiatives in Pakistan are expected to open new opportunities reasonably large number of Project jobs at different level would need to be filled up with trained and qualified person. The advent of large number of project would also require manpower trained in Supply Chain Management.</p> <p>The program is proposed to cover essential of both areas i.e. Project Management and Supply Chain Management. Supply Chain Management focusses on how firms utilize their supplier's processes, technology, and capability to enhance competitive advantage and coordination of the manufacturing, logistics, and materials management function with a project or an organization.</p> <p>In addition to this specialized area the students will be exposed to main functional area of any organization i.e. Finance, Accounting, Marketing, Operations, and Logistics management. A special emphasis is on developing soft skills and a holistic personality. The teaching pedagogy will be to use real world examples and develop modeling skills.</p>
8	Duration: 4 Years
9	Venue(s): On Site/Off Site/Both On & Off Site (<i>tick one/strike-through the ones not applicable; if Off Site, give details</i>) <p>Bahria University Islamabad Campuses under the Department of Management Studies.</p>
10	Programme Scheduling Format: <ul style="list-style-type: none"> • Morning/Evening/Weekend (<i>tick one/strike-through the ones not applicable</i>)

	<ul style="list-style-type: none"> • Bi-Semester/Trimester/Semester Summer Session/Annual/Bi-Annual (tick one/strike-through the ones not applicable): Bi-Semester
11	Proposed Date of Commencement: Fall 2022
12	Mode of Study/Examination: As per BU Examination Rules
13	<p>Additional Faculty Member(s) Required: (Indicate if there is a requirement for additional faculty members, fulltime/visiting, along with qualifications.)</p> <p>Regular: 1 (MPhil / MS) in Fall 2022 Visiting: 1 (MPhil / MS)</p>
14	<p>Additional Skilled-Worker(s) Required: (Indicate if there is a requirement for additional Skilled Staff, fulltime/part-time, along with their qualifications/skill sets.)</p> <p>N/A</p>
15	<p>Additional Classroom(s) required: (The requirement is to include the number of classrooms and their capacities.):</p> <p>1st Semester & 2nd Semester: 1 Room</p>
16	<p>Additional Requirement for Laboratories: (The requirement is to include the number of laboratories, their equipment and their capacities.)</p> <p>May be shared within existing labs.</p>
17	<p>Additional Requirement for Books, Subscriptions, Memberships to Online Research Sites/ Repositories: One computer lab would be required; may be shared within existing labs.</p> <ul style="list-style-type: none"> • Existing stock of books partially meets the requirement. Digital library access also supplements the existing stock • About 50 more books would be required on contemporary thought process by different writers on BS Project and Supply Chain Management.
18	Minimum Entry Level: HSSC / Equivalent with 50% Marks
19	Admission Criteria: As per BU Rules for BBA / BS A&F Program
20	<p>Additional/Different Examination Requirement</p> <p>(Indicate if there will be any examination requirement, additional to or different from the BU Academic Rules or Examination Policy in vogue). NIL</p>
21	Number of Admissions Expected for First Intake: 20-25 / semester, this is minimum, we expect more students with awareness for the start up.
22	Number of Admissions Planned/Expected for Subsequent Intakes: 30-40
23	<p>Referred by: (delete which is inapplicable)</p> <p>FBOS: (Indicate the FBOS meeting reference and Item No) 35th FBOS item no 3521</p> <p>Competent Authority: (Indicate the File No & date; reproduce the decision) N/A</p>
24	Complete Plan of Studies, inclusive of complete Roadmap: (Attach as Annex 'A')
25	Course Outlines, Descriptions, Pre-Requisites & Readings (Compulsory & Recommended) (Attach as Annex 'B') in Pdf

B. FINANCIAL DETAILS		
1	Source of Funding: <ul style="list-style-type: none"> • BU: Fully/Partially: Fully • Public Sector (B1): Fully/Partially (provide complete details; attach MOU, agreement etc.) • NNGO (B1): Fully/Partially (provide complete details; attach MOU, agreement etc.) • INGO (B1): Fully/Partially (provide complete details; attach MOU, agreement etc.) • UN/IGO (B1): Fully/Partially (provide complete details; attach MOU, agreement etc.) 	
2	Degree Duration:	Annual or Semester System: Annual Number of Years (4) Semester: yes, Eight (8) Number of Semester
	Total Number of Credit Hours:	
3	Expected fee to be charged based on Cost & Benefits Analysis: (show working) Fee Rate / Credit Hour: Rs 4800 Tuition Fee / Semester / Student: Rs 86400	
4	Expected Number of students for 1st & 2nd Intakes: 40	
5	Expected Earning from first two Intakes (B5): Tuition Fee / Semester / Student: Rs 86400 Admission Fee and other Charges / Student (One Time): 25000 Earning from First Two Intakes: $40 \times 86400 = 3456000 + 40 \times 25000 = 1,000,000$ Total of first two intakes = Rs 4,456,000	
6	Expected Earnings for the Next Five Years (B6): (show working) 1st Year Earning: Rs 44,96,000 (4.5 Million) 2nd Year Earning: $44,96,000 + 3456000 = 79,52,000$ (7.9 Million) 3rd Year Earning: $79,52,000 + 3456000 = 11,40,8000$ (11.4 Million) 4th Year Earning: $11,40,8000 + 3456000 = 14,86,4000$ (14.9 Million) 5th Year Earning: $14,86,4000 + 3456000 = 18,32,0000$ (18.3 Million)	
7	Total Estimated Salaries of all Additional Human Resources per annum (B7): (Show working) Salary Estimates of Faculty for 1st Year: 16,00,000 Salary Estimates of Supporting Staff for 1st Year: 200000 Total of Faculty and Supporting Staff: Rs 18,00,000 (Approximately)	
8	Cost of Additional Laboratory Equipment/Tools (B8): Existing lab facilities shall be used	
9	Cost of Additional Classrooms (B9): (Include furniture, technical aids etc) Furniture and Other Accessories of one Classroom: 5,00,000 Furniture and Other Accessories of two Classroom: 10,00,000 (Approximate)	
10	Cost of Additional Books, Subscription & Memberships to on-line Sites/Repositories (B10): (show details) : Cost of 50 Books: 100,000	
11	Off-Site rental Expenses and Cost of other Fixtures (B11): (NIL)	
12	Miscellaneous Expenses required for Starting the Program (B12): <ul style="list-style-type: none"> - Advertisement: 100,000 - Printing & Stationery: 10,000 Admin Cost: 5000 - Any other: 5000 - Total: 1,20,000 	

13	Annual Recurring Expenditures in Subsequent Years (B13): <ul style="list-style-type: none"> - Salaries: 50,00,000 - Rentals: - - Subscriptions/Memberships: - - Advertisements: 1,00,000 - Printing & Stationery: 2,00,000 - Admin Cost: 5,00,000 - Any other: 1,00,000 - Total: 59,00,000
14	Total Cost of the Programme (B14): [Add B(7) to B(12)]: Rs 30,20,000
15	Net Cost of the Programme (B15): [Subtract B(1) from B(14): nothing from B1, hence Net Cost: Rs 30,20,000]
16	Net Earnings in First Year (B16: [Subtract B(15) from B(5)]: 44,96,000-30,20,000 = Rs 14,76,000
17	Projected Annual Gross Earning in Subsequent Years (B 17): In 1st Year earning is Rs 44,96,000 For subsequent years, amount of earning would depend upon number of students. However with same number of students, details are given above for 5 years.
18	Projected Annual Net Earning in Subsequent Years: [Subtract B(13) from B(17)] In 1st Year earning is Rs 14,76,000. We would start substantial earning from 2nd Year onwards, the amount would depend upon number of students.

ROADMAP OF BACHELOR OF SCIENCE IN PROJECT AND SUPPLY CHAIN MANAGEMENT

Campus: Islamabad
 Department: Management Studies
 Program Title: Bachelor of Science in Project and Supply Chain Management
 Program Level: Undergraduate
 Total Duration of Program: 4 Years
 Total Number of semesters: 8 Semesters
 Total Credit Hours: 132 Credit Hours

Semester - 1

Sr.No.	Pre-requisite Course Code	Course Code	Course Title	Credit Hours	Theory	Lab (if any)
1	N/A	ENG 103	English – I	3	Yes	No
2	N/A	PAK 101	Pakistan Studies	3	Yes	No
3	N/A	ECO 110	Microeconomics	3	Yes	No
4	N/A	QTM 101	Business Mathematics - I	3	Yes	No
5	N/A	ISL 101	Islamic Studies	3	Yes	No
6	N/A	MGT 111	Principles of Management	3	Yes	No
Total Credit Hours in Semester-1				18		

Semester - 2

Sr.No.	Pre-requisite Course Code	Course Code	Course Title	Credit Hours	Theory	Lab (if any)
1	ENG 103	ENG 104	English - II	3	Yes	No
2	N/A	ENS 101	Natural Resource & Trade	3	Yes	No
3	ECO 110	ECO 124	Macroeconomics	3	Yes	No
4	QTM 101	QTM 120	Business Mathematics - II & Numeracy Skills	3	Yes	No
5	N/A	HSS 115	Introduction to Media Studies	3	Yes	No
6	N/A	SCM 101	Introduction to SCM	3	Yes	No
Total Credit Hours in Semester-2				18		

Semester - 3

Sr.No.	Pre-requisite Course Code	Course Code	Course Title	Credit Hours	Theory	Lab (if any)
1	ENG 104	BCM 243	Business Communication	3	Yes	No
2	N/A	ENS 102	Introduction to Environment & Sustainability	3	Yes	No
3	N/A	HSS 108	Introduction to Sociology	3	Yes	No
4	N/A	MIS 162	IT Skills	3	No	Yes
5	N/A	ACC 101	Principles of Accounting	3	Yes	No
6	MGT 111	PMT 201	Introduction to Project Management	3	Yes	No
Total Credit Hours in Semester-3				18		

Semester - 4

Sr.No.	Pre-requisite Course Code	Course Code	Course Title	Credit Hours	Theory	Lab (if any)
1	N/A	ACC 391	Cost and Managerial Accounting	3	Yes	No
2	N/A	MKT 110	Principles of Marketing	3	Yes	No
3	N/A	QTM 110	Business Statistics	3	Yes	No
4	PMT 201	PMT 202	Project Scheduling and Cost Management	3	Yes	No
5	SCM 101	OPM 360	Operation and Production Management	3	Yes	No
6	PMT 201	PMT 203	Risk Management in PM and SCM	3	Yes	No
Total Credit Hours in Semester-4				18		

Semester - 5

Sr.No.	Pre-requisite Course Code	Course Code	Course Title	Credit Hours	Theory	Lab (if any)
1	N/A	SCM 301	Inventory and Warehouse Management	3	Yes	No
2	QTM 110	QTM 205	Statistical Inference and Quantitative Research	3	Yes	No
3	N/A	PRO 427	Logistics Management	3	Yes	No
4	MGT 111	MGT 242	Organizational Theory & Behavior	3	Yes	No
5	N/A	QTM 301	Quality Management	3	Yes	No

6	N/A	SCM 302	Supply Network Planning and Design	3	Yes	No
Total Credit Hours in Semester-5			18			

Semester - 6

Sr.No.	Pre-requisite Course Code	Course Code	Course Title	Credit Hours	Theory	Lab (if any)
1	QTM 110	RMT 240	Research Methods & Techniques	3	Yes	No
2	SCM 301	SCM 320	Import & Export Management	3	Yes	No
3	SCM 303	SCM 321	Multimodal Transport Management	3	Yes	No
4	N/A	PMT 301	Project Procurement & Contract Management	3	Yes	No
5	PTM 202	PMT 302	MS Project and Primavera	3	No	Yes
Total Credit Hours in Semester-6				15		

Semester-7

Sr.No.	Pre-requisite Course Code	Course Code	Course Title	Credit Hours	Theory	Lab (if any)
1	RMT 240	RMT 360	Operations Research	3	Yes	No
2	N/A	SCM 323	Innovations in E-commerce	3	Yes	No
3	N/A	PMT 402	Monitoring, Evaluation & Control	3	Yes	No
4	N/A		Elective - I	3	Yes	No
5	N/A		Elective - II	3	Yes	No
Total Credit Hours in Semester-7				15		

Semester - 8

Sr.No.	Pre-requisite Course Code	Course Code	Course Title	Credit Hours	Theory	Lab (if any)
1	PMT 302	SDW 680	Project / Thesis	6	Yes	No
2	N/A		Elective - III	3	Yes	No
3	N/A		Elective - IV	3	Yes	No
Total Credit Hours in Semester-8			12			

LIST OF ELECTIVE COURSES

Sr.No.	Pre-requisite Course Code	Course Code	Course Title	Credit Hours	Theory	Lab (if any)
1	N/A	SCM 403	Planning Controlling Supply Chain Systems	3	Yes	No
2	N/A	PMT 403	Management of Project Based Organization	3	Yes	No
3	N/A	PMT 404	Project Review, Assurance and Governance	3	Yes	No
4	N/A	PMT 405	Demand and Revenue Management	3	Yes	No
5	N/A	PMT 406	Project People Management	3	Yes	No
6	N/A	SCM 404	Contemporary Issues in Supply Chain	3	Yes	No
7	N/A	SCM 405	Global sourcing and Supplier Management	3	Yes	No
8	N/A	SCM 655	Customer and Supplier Relationship Management	3	Yes	No
9	N/A	SCM 406	Retail Logistics and Supply Chain Management	3	Yes	No
10	N/A	SCM 407	Logistics and Distribution Management	3	Yes	No

BAHRIA UNIVERSITY, ISLAMABAD

Program Title: BACHELOR OF SCIENCE IN PROJECT & SUPPLY CHAIN MANAGEMENT

Admission Eligibility Criteria: HSSC / Equivalent with 50% Marks

Program Objectives:

1. Are well versed with the role of Project and Supply Chain Management in real corporate world.
2. Understand the tools and techniques required to Manage projects and optimize Supply Chain functions.

Program Learning Outcomes:

On successful completion of Graduates of BS (P&SCM) will be able to:

- Demonstrate their knowledge in the major areas of Project and Supply Chain Management.
- Understand the changing role of Project and supply Chain Management in Global Business Environment.
- Understand ethical and legal frameworks for business.
- Realize the role of other organizational functions in the success of project and supply chain.
- Assimilate knowledge and technology in understanding and solving business problems.

COURSES DESCRIPTIONS

Course Title: Natural Resource & Trade

Course Code: ENS 101

Credit Hours: 3

Pre-requisite (if any): N/A

Courses Description

The course aims to learn students that natural resource management should not be left to the free market. After following this course, students are able to characterize several types of market failure and to explain how each of these causes' environmental problems, such as air pollution and overexploitation of natural resources. Moreover, students will be capable of explaining which policy instruments can be used by the government to tackle environmental problems that arise in a market economy. Finally, students will be taught how renewable resources (such as forestry and fisheries), and non-renewable resources (such as fossil fuels) should optimally be exploited from a social welfare perspective and how the optimal exploitation differs from the exploitation in a market equilibrium. The course consists of lectures, homework assignments, tutorials, and presentation/discussion sessions.

Course Objectives

This course is aimed at developing a thorough understanding of key economic, environmental and ethical aspects of environmental problems, and of the link between theory, methods and empirical analysis. The goal of the homework assignments that will be discussed during the tutorials is to practice modern economic methods to analyze and solve problems in the field of environmental economics. The presentation/discussion sessions are intended to improve the participants' economic reasoning and communication skills. In these sessions, students will present a journal article in class, and they are expected to participate in a group discussion afterwards.

Course Learning Outcomes

- To understand about the theoretical bases of environmental economics and its relationship with growth and sustainability
- To describe the most important interactions between the economy and the environment, and their relationship with sustainable development.
- To explain, why and under which conditions, the free market does not result in an efficient outcome
- To show how externalities can be 'internalized' by using market instruments, like Pigouvian taxes, quotas and tradable permits, etc.
- To advise environmental policy makers on which policy instruments to use under different circumstances

Reference Material

1. Principles and Applications (updated edition) by Herman E. Daly and Joshua Farley
2. Principles of Environmental Economics by Ahmed Hussen

Course Title: Introduction to Environment & Sustainability

Course Code: ENS 102

Credit Hours: 3

Pre-requisite (if any): N/A

Courses Description

This course is designed to equip students about strong foundational knowledge of sustainability, science and technology of promoting sustainability, balance between environmental, social and economic concerns. The domain includes ecosystem, energy and water challenges, life cycle analysis, new technology and climate change science.

Course Objectives

The objective of this course is to provide students with a basic foundation in scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving or preventing them. More, this course is also designed to instruct students on how they can apply this knowledge to active careers pursuing environment & sustainability in traditional degree disciplines.

Course Learning Outcomes

- The course focuses on importance to create a society and economy that is aligned with the ecological systems of Planet Earth
- Course focuses on how has human impact on ecosystems changed over time through the early stages of civilization development to today's industrialized and growing societies?
- The course aims to highlight the primary ways in which impact measurements are useful tools and what are the long-term effects of human ecological footprints?
- Discussion on how are the Earth's systems connected and why is it important to understand the concept of interdependency?
- Explain why is biodiversity an important feature of healthy, vibrant ecosystems?

Reference Material

- An Introduction to Sustainability: Martin Mulligan
- Sustainability: Scott Young and K Dhanda

Course Title: Introduction to Project Management

Course Code: PMT 201

Credit Hours: 3

Pre-requisite (if any): MGT 111

Courses Description

This course provides an overview of project management and the essential tools needed to deliver successful projects on time and on budget. Topics includes the fundamental principles of project management including project initiation, project definition, creation of work breakdown structures, scheduling using Gantt charts and network diagrams, risk management, budgeting and controlling resources, quality assurance, auditing and project termination.

Course Objectives

The objectives of this course are to:

- To make them understand the concepts of Project Management for planning to execution of projects.
- To make them understand the feasibility analysis in Project Management and network analysis tools for cost and time estimation.
- To enable them to comprehend the fundamentals of Contract Administration, Costing and budgeting.
- Make them capable to analyze, apply and appreciate contemporary project management tools and methodologies.

Course Learning Outcomes

On completion of the course students would be able to:

1. Describe project management and its key elements, including project stakeholders, project management knowledge areas, tools and techniques, and success factors.
2. Create a work breakdown structure with the related organizational and cost control structures.
3. Use Critical Path Method (CPM), Program Evaluation Review Techniques (PERT) and Gantt project control tools.
4. Analyze and solve simple resource levelling problems.
5. Understand risk and risk management techniques.
6. Develop a project implementation plan for a simple project.

Reference Material:

A Guide to the Project Management Body of Knowledge (PMBOK® Guide) sixth Edition by Project Management Institute

Course Title: Project Scheduling and Cost Management

Course Code: PMT 202

Credit Hours: 3

Pre-requisite (if any): PMT 201

Courses Description

This course is an introduction to the two core aspects of project management, i.e. Project Scheduling Management and Project Cost Management. In this course, students will be introduced to the processes of preparing Schedule Management and Cost Management Plans; defining and sequencing project activities; estimating activity durations and activity costs; preparing project schedule and cost baselines; and monitoring & controlling project schedule and costs.

Course Objectives

The objective of this course is to learn various fundamentals tools and techniques used in Project Scheduling & Cost Management, including duration & cost estimation methods, critical path method, earned value management, variance analysis and forecasting.

Course Contents

- a. Introduction to project objectives
- b. Preparing Schedule Management Plan
- c. Defining project activities from work packages
- d. Activity relationships and dependencies
- e. Sequencing project activities using network diagram
- f. Estimating activity duration using single point and three point estimating
- g. Analogous, Parametric and Bottom-Up estimation
- h. Determining project duration using Critical Path Method (CPM)
- i. Monitoring and controlling project schedule
- j. Introduction to project selection methods
- k. Preparing Cost Management Plan
- l. Estimating costs
- m. Determining project budget and defining cost baseline
- n. Monitoring and Controlling project cost using earned value management
- o. Variance analysis
- p. Forecasting

Course Learning Outcomes

- Understanding the concept of project objectives, including time and cost objectives
- Understanding the role of management plans in project management
- Learning the processes involved in project schedule planning, including defining and sequencing project activities, estimating activity durations, and developing schedule
- Learning how to monitor and control project schedule
- Learning the processes involved in project cost planning, including estimating costs and determining project budget.
- Learning how to monitor & control project costs
- Learning various fundamental tools & techniques used in project schedule & cost management, including estimating techniques, estimation types, network diagram, Critical Path method (CPM), Earned Value Management (EVM), variance analysis and forecasting.

Reference Material

Book 1 – PMBOK Guide, 6th Edition, Project Management Institute (PMI), USA, 2018

Book 2 – PMBOK Guide, 7th Edition, Project Management Institute (PMI), USA, 2021

Book 3 – Practice Standard for Scheduling, 3rd edition, Project Management Institute (PMI), USA, 2019

Course Title: Risk Management in PM and SCM

Course Code: PMT 203

Credit Hours: 3

Pre-requisite (if any): PMT 201

Courses Description

This course aims at teaching concepts, strategies, tools and techniques to manage risks in projects and supply chain. The first part of the course addresses the processes involved in project risk management (such as planning the risk management, identifying risks, carrying out qualitative and quantitative risk analysis, preparing risk management strategies and risk response plans,

implementing risk response plans and monitoring risks & risk management effort) and associated tools and techniques. Whereas, the second part of the course focuses on the concepts and methods related to supply chain risk management, including identifying, monitoring, detecting and mitigating risks/threats to supply chain continuity and profitability.

Course Objectives

The objective of this course is to learn how to use project risk management techniques in PM & SCM to proactively plan, assess, monitor, control, document, and close out their risk management activities on a project successfully.

Course Contents

- a. Introduction to basic concepts and terms used in Project Risk Management
- b. Preparing a risk management plan for project
- c. Identifying risks
- d. Performing qualitative risk analysis
- e. Performing quantitative risk analysis
- f. Planning risk responses
- g. Implementing risk responses
- h. Monitoring risks and risk management effort
- i. Introduction to basic concepts and terms used in Supply Chain Risk Management
- j. Identifying supply chain risks
- k. Monitoring supply chain risks
- l. detecting supply chain risks
- m. Mitigating supply chain risks

Course Learning Outcomes

- Understanding basic term used in Project Risk Management
- Understanding basic term used in Project Risk Management
- Learning the processes involved in Project Risk Management, including Plan Risk Management, Identify Risks, Perform Qualitative Risk Analysis, Perform Quantitative Risk Analysis, Plan Risk Responses, Implement Risk Responses and Monitor Risks
- Learning project strategies, tools and techniques used for carrying out risk analysis and preparing risk responses
- Learning the processes, strategies and techniques used in Supply Chain Risk Management

Reference Material

Book 1 – PMBOK Guide, 6th Edition, Project Management Institute (PMI), USA, 2018

Book 2 – PMBOK Guide, 7th Edition, Project Management Institute (PMI), USA, 2021

Book 3 – The Standard for Risk Management in Portfolios, Programs, and Projects, Project Management Institute (PMI), USA, 2019

Book 4 – Supply Chain Risk Management: Advanced Tools, Models, & Developments, 1st Edition, 2018

Book 5 – Supply Chain Risk Management: How to Design and Manage Resilient Supply Chains, 3rd Edition

Course Title: Logistics Management

Course Code: SCM 303

Credit Hours: 3

Pre-requisite (if any): N/A

Courses Description

There is a great deal of confusion regarding exactly what supply chain management (SCM) involves. In fact, most people using the name supply chain management treat it as a synonym for logistics or as logistics that includes customers and suppliers. However, successful SCM requires cross-functional integration of key business processes within the firm and across the network of firms that comprise the supply chain.

Course Objectives

The objective is to determine how to successfully accomplish this cross-functional integration of key business processes. A class session will be devoted to each of the eight supply chain processes as well as to topics such as: The role of distribution manager within logistics domain such as transportation, stock control, warehousing, and ensuring structures and flow of goods and materials.; integrating logistics strategy to corporate strategy; Distribution Channels; Hazardous Materials Management; Air Transportation; Logistics Technologies & Procedures; Transportation Law; Inventory & Materials Handling; Global Supply Chain; Quality Systems; Financial Evaluation; Industrial/Consumer Sales; Global Trade Intermediaries; Management Information Systems; Public Policy; Hazardous Material Transportation; International Logistics Management; Logistics Management and Operations; Airport Operations; Shipping and maritime logistics.

Course Content:

This course helps students to understand the principles, management, economics, finances, and other issues associated with the global air, maritime, logistics, and transportation systems of the world by providing them with tools necessary to learn of the cutting-edge processes, companies, and standards associated with transportation and logistics management. It specifically addresses strengths and weaknesses with respect to market opportunities in the student's major and intended field of work. Understanding that industry and geographic factors should influence the content of the curriculum instead of a standardized one-fits-all design, dynamic and constantly changing environment of the industry are discussed through guest lectures of Logistics managers and professionals. Core Topics in Logistics Management: A framework for SCM Cross-functional integration of key business processes Basic terms, concepts, and principles in Logistics Distribution Channels Hazardous Materials Management Air Transportation Logistics Technologies & Procedures Transportation Law Inventory & Materials Handling Global Supply Chain Outsourcing (3pls-client) relationships Quality Systems Financial Evaluation Industrial/Consumer Sales Global Trade Intermediaries Management Information Systems Public Policy Hazardous Material Transportation International Logistics Management Logistics Management and Operations Airport Operations Shipping and maritime logistics

Course Learning Outcomes

The objectives of this course are to provide the student with:

1. An understanding of the primary differences between logistics and supply chain management
2. An understanding of the tools and techniques useful in Logistics management
3. Knowledge about the professional opportunities in Logistics

Reference Material:

Introduction to Logistics Systems Management (2nd Edition): Gianpaolo Ghiani, Gilbert Laporte, Roberto Musmanno

Business Logistics: Supply Chain Management (5th Edition) L Ronald H. Ballou

Additional Reading Packet of Articles – Handouts Other course materials including PowerPoint slides, cases, and outside readings and assignments will be made available in class.

Course Title: Procurement and Contract Management

Course Code: PMT 301

Credit Hours: 3

Pre-requisite (if any): N/A

Courses Description

This course provides participants with a systematic and interactive approach to procurement management primarily achieved through analysis of the Procurement Life Cycle (Plan Procurement Management, Conduct Procurements and Control Procurements) from the perspective of both Buyers and Sellers.

Course Contents:

The course is intended to provide participants with an understanding of:

- The Procurement Management Process consistent with PMBOK® Guide, including all phases of the Procurement Life Cycle, and from the perspective of both Buyers and Sellers.
- The processes required to prepare effective RFPs and those required to respond successfully to RFPs
- Contract types (e.g., Output Contracts, Option Contracts) and common contract clauses (e.g., the often misunderstood 'Terms Conditions' language).
- Pricing mechanisms (e.g., firm fixed fees, penalty clauses, time & materials) and their implementation.
- Outsourcing methodologies
- Global contracting and contract management and some of the ethical challenges and issues that may arise in that context

Course Learning Outcomes

At the end of the course, students will be able to:

- Describe the fundamental elements of a contract, including basic terms and conditions
- Develop appropriate selection criteria for vendor selection
- Analyze RFP or ITB from supplier's perspective
- Specify accurate and manageable contract scopes
- Develop effective terms and conditions for contract review

Reference Material:

- Reference: PMBOK 7th Edition.

Course Title: MS Project and Primavera

Course Code: PMT 302

Credit Hours: 3

Pre-requisite (if any): PMT 202

Courses Description

This course is an introduction to the two commonly used Project Management tools, namely MS Project, 2019 and Primavera p6. It is a lab-based course in which students will be introduced to a range of commands and functions that are used during project planning, execution, monitoring & controlling as well as for progress reporting. Students will be provided with hands-on experience of these tools through practice exercises, industry examples, case studies and assignments.

Course Contents

Part 1 – MS Project, 2019

Part 2- Primavera

- a. Role of software in project management.
- b. Introduction to the commonly used project management tools.
- c. Introduction to the MS Project Interface, including tabs, ribbons & commands.
- d. Managing Files & Setting Options in Backstage View.
- e. Planning a Project on MS Project.
- f. Setting and creating project calendar.
- g. Entering tasks, subtasks, summary tasks and milestones.
- h. Entering task properties including start & finish dates, task duration, predecessor tasks.
- i. Entering constraints and deadlines.
- j. Types of resources in MS Project.
- k. Entering resources, their rates and assigning them to tasks.
- l. Adding / removing resources.
- m. Checking costs per resource and costs per tasks.
- n. Saving a Baseline for Plan.
- o. Entering actual values for tasks, including task completion percentages etc.
- p. Examining variances.
- q. Generating project reports.

Course Learning Outcomes.

- Understanding the role of software in Project Management
- Learning various commands and features available in MS Project, 2019 and Primavera that can be used during project planning, executing, monitoring & controlling and progress reporting
- Getting a hands-on experience of MS Project, 2019 and Primavera through practice exercises, industry examples, case studies and assignments.

Reference Material

Book 1 – Microsoft Project Step by Step; Carl Chatfield & Timothy Johnson; Microsoft Press 2019

Book 2 – PMBOK Guide, 6th Edition, Project Management Institute (PMI), USA, 2018

Book 3 – PMBOK Guide, 7th Edition, Project Management Institute (PMI), USA, 2021

Course Title: Monitoring, Evaluation & Control**Course Code: PMT 402****Credit Hours: 3****Pre-requisite (if any): N/A****Courses Description**

The course will enable participants of BS programme to understand project monitoring and control as per standards defined by Project Management Institute (PMI) through the PMBoK 7th edition. This course aims to provide students with a comprehensive and concurrently with a rigorous exposure to the subject of project monitoring, evaluation & control as it relates to a project's internal and external environments. The knowledge base and professional horizon of the participants will be broadened through tools and techniques in vogue in the field of project management. Case studies and classroom discussions will add heuristic element to the course.

Course Contents:

1. Introduction to Project Monitoring, Evaluation & Control: An overview of the basic concepts, parameters, and techniques of project MEC.
2. MEC as a specialized area of project management and its criticality for projects.
3. MEC systems: merits and challenges
4. Project monitoring and evaluation dimensions
5. Scope of Project evaluations
6. Types of project evaluations
7. Quantitative tools in pre project evaluations
8. Social and environmental impact assessments
9. Project life cycle evaluations: phases, milestones, decision gates, activities and tasks
10. Project completion evaluations
11. Post project evaluations
12. Project success criteria
13. Empirical project performance surveys
14. Result based monitoring and evaluation
15. Baselines, targets and indicators
16. Objective-oriented project planning and logical framework analysis
17. Performance monitoring and evaluation strategies and plans
18. Participatory monitoring and evaluation
19. Monitoring and evaluation by international agencies
20. Project progress/status reporting systems
21. Project Audits: what, why, when, how
22. Project controlling: a performance approach from PMBOK 7

Course Learning Outcomes:

After having completed this course successfully, participants will be able to:

1. The course aims to provide students with a comprehensive and concurrently with a rigorous exposure to the subject of project monitoring, evaluation & control as it relates to a project's internal and external environments.
2. To equip students with the knowledge they need to confidently monitor, evaluate and control their projects effectively and efficiently and ensure that their project goals and objectives are fully met.
3. Understand basic concepts, tools and techniques as applicable to Monitoring, Evaluation and Control (MEC) in Project Management.
4. learn the PMI perspective of (MEC);

5. Find the course contributing to the preparation for the PMP certification examination in the Monitoring and Control process group.

Reference Material:

1. PMBOK 7th Edition
2. Burke, Rory (2004), *Project Management. Planning and Controlling Techniques*, John Wiley and Sons (Asia), 5. Edition.
3. Khawaja, Sarfraz (2011), *Good Governance and Result-Based Monitoring*, Poorab Academy; Islamabad

Course Title: Management of Project Based Organization

Course Code: PMT 403

Credit Hours: 3

Pre-requisite (if any): N/A

Courses Description

This course focuses on the management of project-based organizations, as businesses increasingly use project frameworks for their operations, having managers skilled at leading projects is fast becoming essential. The Managing a Project-Based Organization unit has the overall object of teaching to become comfortable and competent in addressing major management issues and decisions in a project-based organization.

Course Learning Outcomes:

1. Has gained deep knowledge within the area of project management and project organization.
2. Is able to identify and explain organizational prerequisites that create possibilities and difficulties for project management.
3. Is able to utilize models for analyzing project-based organization and management
4. Is able to independently understand and analyze project's role in broader organizational context.
5. Is able to critically evaluate different theories and models for project management in project-based companies from empirical observations and experiences

Reference Material:

1. Handbook of Project-based Management: Leading Strategic Change in Organizations BY J. Rodney Turner
2. The International Dimension of Organizational Behavior
3. Project Management - Head First

Course Title: Project Review, Assurance and Governance

Course Code: PMT 404

Credit Hours: 3

Pre-requisite (if any): N/A

Courses Description

Projects are hard. by definition, projects are about non-routine activities. Many of them are large and complex; they may involve many people, often from different backgrounds and increasingly with different languages and cultures. Amongst all of this, it is easy to get lost, to overlook important trends or to misunderstand each other. So projects fail. The course of Project Reviews, Assurance and Governance is about learning from mistakes and understanding what's really going on with most of the projects. In order for reviews and assurance to provide this information and learning, project managers need to perform them effectively and that is the purpose of this course. The core of the course is built around a number of models of project review processes and governance, all derived

from practice and interspersed with case studies drawn from practitioners, project management literature and from practices in other industries. The course is the blend of the conceptual and the practical knowledge needed to make project assurance process sympathetic, relevant and rigorous for organizations, projects and programs.

Course Contents:

- explaining project success and project failure and the need for project reviews and assurance to help to understand what's really going on in the projects
- Project review process
- Agree terms of reference with the review's sponsor, where to look for information,
- identify what standards and 'good practices' they will review against and
- A clear understanding of what activities they will undertake.
- Review parameters, organizational learning, the importance of evidence
- Review checklist
- Project Stress management
- the challenges to performing effective reviews
- the factors that need to be considered when setting up a project review or assurance function
- governance matrix

Course Learning Outcomes:

After having completed this course successfully, participants will be able to:

- understand the process of project review
- list and relate various factors related to project review and governance process
- develop project governance matrix
- be aware of the challenges of project review, assurance and governance

Reference Material:

Textbook: Project Reviews, Assurance and Governance, **1st Edition**, By Graham Oakes, Gower Publishers.

A Guide to the Project Management Body of Knowledge PMBOK, PMI, 7th Edition.

Course Title: Demand and Revenue Management

Course Code: PMT 405

Credit Hours: 3

Pre-requisite (if any): N/A

Courses Description

Management is about matching demand and supply. This course focuses on the demand without attempting to manage the supply. But it does take the amount, location, condition, or vintage of the supplies into account. Demand must be understood first to be managed. This understanding comes partly from statistical forecasting but more importantly from the identification of the demand drivers. These drivers are specific to industries, but some are common and easily obtainable such as general macroeconomic indicators, demographic data, housing inventories, and temperatures. Unlike these demand drivers, prices can be managed over time, customer classes, locations. A good portion of the course is dedicated to determining good prices depending on inventory, capacity, input costs, and previous prices Revenue management (RM) has successfully been implemented by companies in air transportation, hospitality (hotels, cruises, theme parks, casinos), car rental, media, broadcasting, natural-gas storage and transmission, electricity generation and transmission, show business (concerts, theaters, sport events), universities.

Course Contents:

1. Introduction to pricing and revenue optimization
2. Demand functions and price optimization: Price-response function; Competition.
3. Price-response estimation
4. Price differentiation: Volume discounts; Arbitrage and cannibalization
5. Consumer welfare.
6. Constrained supply: Opportunity cost; Segmentation; Variable pricing
7. Revenue management challenges
8. Capacity Allocation
9. Network management
10. Customized Pricing: List prices vs. customized prices; Responses to competitor bids.

Course Learning Outcomes:

After having completed this course successfully, participants will be able to:

- be able to list and relate demand drivers to demands in specific industries,
- be able to derive and compute price-demand relationship, optimal prices and revenues,
- be aware of revenue management practices.

Reference Material:

Textbook: Pricing and Revenue Optimization. By Robert L. Phillips. First edition published by Stanford University Press, 2005. ISBN 0-8047-4698-2.

Revenue Management and Pricing: Case Studies and Applications by I. Yeoman and U. McMohan-Beattie.

Course Title: Project People Management

Course Code: PMT 406

Credit Hours: 3

Pre-requisite (if any): N/A

Courses Description

This course focuses on managing human resources and communication on projects. The human resources management lessons discuss the processes required to make the most effective and efficient use of the human and physical resources assigned to your projects. The communication lessons teach how to ensure timely and appropriate generation, collection, dissemination, storage and disposition of project information with project stakeholders. This course discusses the critical links among project, stakeholders, teams, ideas and information that are necessary for success.

Course Learning Outcomes

1. Know and understand the basic content and techniques of project management such that stakeholder needs, scope, time, cost, quality, risk, procurement, human resources, communications, and the integration of these are appropriately addressee.
2. Be able to how a project is conceived and perform the feasibility study and project proposal understanding the project deliverables and sequence of a project from conception to closing.
3. Understand the different project baselines and demonstrate how changes can be incorporated in a project after the project management plan is approved.
4. Understand how a project is conducted and the different roles and responsibilities involved in it as per standard ethical project principles.

Reference Material:

- a. Project Management Book - Method 123
- b. Project Management- A System Approach to Planning, Scheduling, and Controlling by Harold Kerzner
- c. The International Dimension of Organizational Behavior
- d. The Wisdom of teams, Katzenbach and Smith
- e. The 7 Habits of Highly Effective People by Stephen R. Covey

Course Title: Customer and Supplier Relationship Management

Course Code: SCM 655

Credit Hours: 3

Pre-requisite (if any): N/A

Courses Description

The aim of the course is to feature the key principles and practical methods which can be used in the supplier relationship process, together with practical case study sessions to maximize the transfer from the classroom learning to the workplace.

Course Contents:

1. Developing a portfolio of supplier relationships

- Why we need to segment supplier relationships
- Deconstructing elements of supplier relationships
- Differentiating supplier relationships
- Developing joint cost and value initiatives
- Improving supplier performance and capability
- Developing a supplier relationship plan

2. Segmenting supplier relationships

- The supply base as a strategic asset
- Identifying the “vital few” suppliers
- Targeting new suppliers and delinquent suppliers

3. Deconstructing elements of supplier relationships

- The balance of power between the parties
- The allocation of rights and obligations
- The personal dimension between the parties
- How relationships may differ across these dimensions

4. How to differentiate supplier relationships

- Matrix based approaches
- Resource based approaches
- Reviewing the spend portfolio
- Formal and informal classification schemes
- Treating suppliers consistently across categories

5. Developing joint cost and value initiatives

- Constituting joint cost down/cost out teams
- Creating an appropriate governance environment
- Creating value, claiming value, and sharing value?

- Identifying suitable projects
- Dealing with obstacles to benefit realization

6. Customer of choice and 180 degree feedback

- What is a “customer of choice”?
- Setting up a 180 degree feedback programme
- What dimensions can we measure?
- Dealing with unexpected feedback

7. Improving delinquent supplier performance

- Enrolling suppliers in improvement programmes
- Executive support for improvement
- Developing contingency plans
- Target setting and incremental improvement

8. Improving supplier capability

- Supplier development in practice
- Governance needed to sponsor development
- Developing a business case for change
- Market making in practice

9. Developing a supplier relationship plan

- Category plan and relationship plan?
- What we can change in a relationship
- What we can influence in a relationship
- Key relationship levers

Course Learning Outcomes:

After having completed this course successfully, participants will be able to:

1. Develop a portfolio of supplier relationships and customer relationships and allocate suppliers and customers into the most appropriate relationship type
2. Develop joint initiatives with suppliers/customers and design and manage appropriate governance and team mechanisms to secure co-operative outcomes
3. Engage suppliers/customers in feedback mechanisms to develop mutual understanding and select the most appropriate dimensions for measurement and feedback
4. Distinguish between supplier performance management and supplier development and design appropriate interventions in each case and similar mechanism for customers
5. Develop relationship action plans to target the drivers of relationships and adapt the priorities for a range of different contexts and relationships

Reference Material:

1. Easton, Stephen, Michael D. Hales, Christian Schuh, Michael F. Strohmer, Alenka Triplat, and A. T. Kearney. *Supplier relationship management: How to maximize vendor value and opportunity.* Apress, 2014.
2. Osterrieder, Philipp. "Customer Relationship Management and the Value Network." In *Managing Industrial Services*, pp. 115-133. Springer, Cham, 2021.

Course Title: Retail Logistics and Supply Chain Management

Course Code: SCM 406

Credit Hours: 3

Pre-requisite (if any): N/A

Courses Description

Business Logistics is the set of activities involved in the flow of materials and products through an organization and through the supply chain to the market. More specifically, business logistics is the subject that manages efficient, effective flow and storage goods, services, and related information in a supply chain. The key elements of business logistics covered in this course include logistics planning and strategy, customer service, procurement, transport, inventory, warehousing, and handling.

Course Objective:

This course addresses questions about logistics planning, transport modes selection, vehicle routing, inventory policies, purchasing quantity and timing, and storage selection. Logistics is a fast growing business area in today's business world. Global companies, such as IBM, HP, GE, and P&G, have heavily invested in Logistics in order to gain competitive advantages. This course focuses on the functional activities (the nuts and bolts) in supply chains that process the flow of products and information from the point of origin to the point of consumption. Other topics to be addressed are: The role of distribution manager within logistics domain such as transportation, stock control, warehousing, and ensuring structures and flow of goods and materials.; integrating logistics strategy to corporate strategy; Distribution Channels; Hazardous Materials Management; Air Transportation; Logistics Technologies & Procedures; Transportation Law; Inventory & Materials Handling; Global Supply Chain; Quality Systems; Financial Evaluation; Industrial/Consumer Sales; Global Trade Intermediaries; Management Information Systems; Public Policy; Hazardous Material Transportation; International Logistics Management; Logistics Management and Operations; Airport Operations; Shipping and maritime logistics.

Course Learning Outcomes

Upon successful completion, students should be able to:

1. Analyze how logistical decisions (e.g., facilities, inventory, and transportation) impact the performance of the firm as well as the entire supply chain.
2. Analyze the strengths and weaknesses of various transportation modes and perform cost analysis.
3. Develop the strategies that can be taken to find the best paths to route vehicles to deliver and collect goods at multiple stops.
4. Develop the strategies that can be taken to manage inventories, including deciding the timing and quantity for replenishments without hurting the level of product availability.
5. Know basic characteristics and costs of warehousing and materials handling activities.
6. Use computing software to solve various logistics decision-making problems, including inventory policies and vehicle routing.
7. Interact with team members to achieve group objectives

Reference Material:

- The Handbook of Logistics and Distribution Management: Understanding the Supply Chain (5th Edition): Alan Rushton, Phil Croucher, Peter Baker
- Business Logistics: Supply Chain Management (5th Edition) L Ronald H. Ballou
- Additional Reading Packet of Articles – Handouts
- Other course materials including PowerPoint slides, cases, and outside readings and assignments will be made available in class.

Stages		Available exemption and conditions applicable for Graduates/Post Graduates	
4 year Graduates from SDAI		4 year Graduates from non-SDAI	2 year Graduates
Exemption from all papers of AFC Without any other condition		Exemption from all papers of AFC	Exemption from all papers of AFC AFC
Minimum 60%marks in aggregate;		Minimum 60%marks in aggregate;	
60% marks or equivalent grades in relevant subject; and		75% marks or equivalent grades in relevant subject; and	
Syllabus matches at least 70% with the prescribed syllabus of relevant subject		Syllabus matches at least 70% with the prescribed syllabus of relevant subject	
4 year Graduates from SDAI		4 year Graduates from non-SDAI	2 year Graduates
Exemption from	Exemption from	Exemption from	CAF
all subjects of CAF		CAF-1 to 4	CAF-1 & 2
Minimum 60%marks or equivalent grades in relevant subject		Minimum 60% marks in aggregate	Minimum 60% marks in aggregate
60% marks or equivalent grades in relevant subject; and		75% marks or equivalent grades in relevant subject; and	
Syllabus matches at least 70% with the prescribed syllabus of relevant subject		Syllabus matches at least 70% with the prescribed syllabus of relevant subject	Syllabus matches at least 70% with the prescribed syllabus of relevant subject
4 year Graduates from SDAI		4 year Graduates from non-SDAI	2 year Graduates
PCSC	Exempted (can apply for)	Exempted (can apply for)	No exemptions available

LANGUAGES PROPOSAL**LANGUAGE COURSES IN SUMMER VACATIONS**

Duration: **2 months June – September**

Days – **Monday – Wednesday - 3 hours**

Certified course. After completing of course, every participant will be awarded a certificate.

Urdu Language level: **A2**

Duration: **1st July – 1st September**

Timings: **10 – 1 pm**

English Language level: **B1**

Duration: **1st July – 1st September**

Timings: **10 – 1 pm**

French Language level: **A1**

Duration: **1st July – 1st September**

Timings: **10 – 1 pm**

Assessment: All courses will be assessed via Speaking tests, written expression, and presentation as per the criteria set by the language instructor.

Course modules will be decided by the instructor.

Why Should we learn a language?

Language program including languages like English Urdu and French is being offered by the School of Social Sciences and Humanities, so that the students who have a deficiency in any of the above-mentioned language can improve or Polish it.

English is the most common lingua franca of the world and learning proper English helps a pupil to communicate to the global citizens and help them understand ideas better.

Urdu is the National language of Pakistan. Generation Z (born after 1996) are not quite familiar with Urdu language and hence desperately need to relate to their roots.

French is spoken as a native language in more than two dozen countries on five continents. Depending on your sources, French is either the 11th or the 13th most common native language in the world, with 72 to 79 million native speakers and another 190 million secondary speakers. French is the second most taught second language in the world (after English), making it a real possibility that speaking French will come in handy practically anywhere you travel.

How will it benefit the department?

Teaching Urdu, English and French will benefit the department by giving monetary benefits as well as networking with Language instructors of foreign languages. While students will benefit from learning languages in a better way, the department will be able to gain financial benefits.

Future Prospects

The introduction of three languages English, Urdu and French will be a pilot project and after having a look at the success, School of Social Sciences and Humanities plans on introducing more languages to learn like German, Dutch, Arabic, Punjabi etc.

The department wants to introduce a full-fledge language lab which is functional not just in summer vacations but also provides languages classes throughout the year in a two-month program like NUML is current offering.

A. ACADEMIC DETAILS

1	Faculty/Department: Department of Humanities and Social Sciences, Bahria University, Islamabad Campus (BUIC)
2	Name of the Programme: Teaching of languages at beginners' level – French, Urdu, English
3	Mission: <p>The teaching of Languages emphasizes quality and professionalism in all its languages, beginning with introductory and intermediate language courses taught in the respective language and practicing into an advance stage. The professional faculty is committed to excellence in the areas of teaching and research of the various languages, literatures, and cultures it offers. It integrates the study of languages with the means to access and analyze other cultures. In today's interconnected world, Foreign Language Teachers serve a critical purpose in providing individuals with the skills they need to communicate with people from countries and cultures other than their own. A good resume objective for this role will cover any relevant skills, experience, and knowledge you have. It should also serve the purpose of inviting the hiring manager to read your resume in its entirety.</p>
4	Objectives of the Program <ul style="list-style-type: none"> 1. Achieve functional proficiency in listening, speaking, reading, and writing. 2. Recognize culture-specific perspectives and values embedded in language behavior. 3. Decode, analyze, and interpret authentic texts of different genres. 4. Produce organized coherent discourse in oral and written modes. 5. Describe and explain rituals and customs of daily life. 6. Recognize the nature of cultural identity, cross-cultural difference comparison, contrast home and cultures. 7. Develop insight into the nature of language itself, the process of language, and culture acquisition.
5	Outcomes of the Program: <p>After acquiring the languages, students will be able to:</p> <ul style="list-style-type: none"> 1. Demonstrate understanding and use the language to investigate the similarities and differences within the target cultures and among the students' own cultures. 2. Students demonstrate understanding of similarities and differences in the structures of the languages they know 3. Student's access, build, reinforce, expand and evaluate their knowledge of other disciplines, recognize distinctive viewpoints, in activity that requires critical thinking, inquiry, problem solving, creativity, innovation, flexibility and adaptability in order to function in academic and career-related settings.

6	Rationale for the Programme: Electronic media, immigration, and ease of travel are making the world (and Pakistan) increasingly international and bringing us into contact with people from other cultures. This means that being able to communicate across cultural boundaries is more important than
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	ever. The single most important step we can take towards doing this effectively is to learn another language. In many countries, learning more than one language is the norm.
7	<p>Brief Description of the Programme:</p> <p>Humanities & Social Sciences is a continuously growing department of Bahria University aiming to strengthen itself day by day. It has launched many departments and is striving to add value to education, teaching, as well as the university. H&SS department has the language lab and strives to introduce 5 languages which are: Urdu, French, English.</p> <ul style="list-style-type: none"> • English: is the need of the hour. It is the most common lingua franca of the world and is the key to a successful communication across the world. • French: More than 220 million people speak French on all the five continents. French is a major language of international communication. It is the second most widely learned language after English and the sixth most widely spoken language in the world. French is also the second most widely taught language after English and is taught on every continent. The OIF, an international organization of French-speaking countries, is made up of 77 member States and governments. France also operates the biggest international network of cultural institutes, which run French-language course for close on a million learners. • Urdu: Urdu is spoken by more than 100 million people, predominantly in Pakistan and India. It is the official state language of Pakistan and is also officially recognized, or “scheduled,” in the constitution of India. Urdu originates from a combination of other languages such as Farsi, Arabic and Turkish. Member of the Indo-Aryan group within the Indo-European family of languages, it evolved during the invasions of Indian Subcontinent by the Persians and Turkic forces from 11th century onward. The language also borrows words from Russian and Spanish languages. Learning of the language encompasses these cultures of Europe and East and creates a deep and rich understanding of their people and customs.
8	Duration: 2 months
9	<p>Venue(s): On Site/Off Site/Both On & Off Site (Tick one; if Off Site, give details)</p> <p>Language lab, Department of Humanities and Social Sciences, Bahria University, Islamabad Campus, Shangrilla Road Islamabad.</p>
10	Programme Scheduling Format: <i>In Summers</i>
11	Proposed Date of Commencement: Fall 2021
12	Mode of Study/Examination: Assessments
13	<p>Additional Faculty Member(s) Required: (<i>Indicate if there is a requirement for additional faculty members, fulltime/visiting, along with qualifications.</i>)</p> <p>3 language instructors for all languages being taught: experienced instructors with at least Master's degrees and professional training in teaching the respective languages as Second Language</p>
14	<p>Additional Skilled-Worker(s) Required: (<i>Indicate if there is a requirement for additional Skilled Staff, fulltime/part-time, along with their qualifications/skill sets.</i>)</p> <p>Nil</p>
15	<p>Additional Classroom(s) required: (<i>The requirement is to include the number of classrooms and their capacities.</i>)</p> <p>Language lab</p>
16	<p>Additional Requirement for Laboratories: (<i>The requirement is to include the number of laboratories, their equipment, and their capacities.</i>)</p>

	Computers, headphones, and a multimedia set up
17	Additional Requirement for Books, Subscriptions, Memberships to Online Research Sites/ Repositories: Nil
18	Minimum Entry Level: Matriculation (Class 10 th /O-levels) from HEC recognized educational institutes
19	Admission Criteria: Nil
20	Additional/Different Examination Requirement <i>(Indicate if there will be any examination requirement, additional to or different from the BU Academic Rules or Examination Policy in vogue).</i> As per BU Policy
21	Number of Admissions Expected for First Intake: 20-30 students
22	Number of Admissions Planned/Expected for Subsequent Intakes: 50 students in total are expected in each subsequent language course
23	Referred by: (delete which is inapplicable) FBOS: Agenda Point No. 3111
24	Complete Plan of Studies, inclusive of complete Roadmap: (Attach as Annex 'A') Nil
25	Course Outlines, Descriptions, Pre-Requisites & Readings (Compulsory & Recommended) (Attach as Annex 'A') Nil

B. FINANCIAL DETAILS	
1	Source of Funding: BU: Fully
2	Language Program Duration: 2 months Days a week: 3 (Monday – Wednesday) Hours: 3 Total Credit hours: 72
3	Expected fee to be charged based on Cost & Benefits Analysis: (show working) $15000 \times 20 = 300,000$
4	Expected Number of students for 1st & 2nd Intakes: 20 students
5	Expected Earning from first two Intakes (B5): (Show working) $15000 \times 20 \text{ (1}^{\text{st}} \text{ intake)} (2^{\text{nd}} \text{ intake}) = 300,000 + 300,000 = 600,000$
6	Expected Earnings for the Next Five Years (B6): (show working) One course earning: $50 \times 15,000 = 750,000$ Five years earning= $750,000 \times 5 = 3,750,000$
7	Total Estimated Salaries of all Additional Human Resources per annum (B7): (Show working) Salary of one Language Instructor =
8	Cost of Additional Laboratory Equipment/Tools (B8): (show working) Nil

9	Cost of Additional Classrooms (B9): (<i>Include furniture, technical aids etc</i>)	Nil
10	Cost of Additional Books, Subscription & Memberships to on-line Sites/Repositories (B10): (<i>show details</i>)	0.3 million/annum
11	Off-Site rental Expenses and Cost of other Fixtures (B11): (<i>Show details</i>)	Nil
12	Miscellaneous Expenses required for Starting the Program (B12): - Advertisement: - Printing & Stationery: - Admin Cost: Any other	
	- Total: 0.3 million	
13	Annual Recurring Expenditures in Subsequent Years (B13): - Salaries: - Rentals: - Subscriptions/Memberships: - Advertisements: - Printing & Stationery: - Admin Cost Any other - Total: 0.5 million	
14	Total Cost of the Programme (B14): [Add B(7) to B(12)] $B(7) - B(12) = 0.6 \text{ Million} + 0.3 \text{ Million} + 0.3 \text{ Million} + 0.5 \text{ Million} = 1.7 \text{ Million}$	
15	Net Cost of the Programme (B15): [Subtract B(1) from B(14)] $B(14) - B(1) = 1.7 \text{ Million} - 0 = 1.7 \text{ Million}$	
16	Net Earnings in First Year (B16): [Subtract B(15) from B(5)] $B(5) - B(15) = 4 \text{ Million} - 1.7 \text{ Million} = 2.3 \text{ Million}$	

LAUNCH OF NEW PROGRAM - BACHELOR OF SCIENCE IN ENGLISH - BUIC

A. ACADEMIC DETAILS	
1	Faculty/Department: Department of Humanities and Social Sciences, Bahria University, Islamabad Campus (BUIC)
2	Name of the Programme: Bachelor of Science (BS) in English Literature/Linguistics
3	Mission of the Programme: The mission of BS English Program is to acculturate students with research based knowledge by equipping them with modern theories & technicalities of English Literature and Language. The purpose is to make the learners aware of core literary and linguistics concepts about English language and literature. Vision: The aim is to broaden and deepen the understanding of the relationship between literature, language and society. They are directed towards the development of an extensive understanding of key literary & linguistic concepts.
4	Objectives of the Programme: <ul style="list-style-type: none"> • To equip students with a wide range of transferable cognitive, practical and key skills and a foundation of further study, employment and lifelong learning. • To cultivate an appreciation of English Language and Literature through reading, writing, researching, and thinking about texts in the widest context in the service of a rich and meaningful life. • To prepare social scientists and linguists who can contribute to socio-cultural & intellectual growth of the country and subsequently world at large. • To impart knowledge of literary discourses & techniques among students for understanding, reconstructing and deconstructing narratives. • To undertake independent research with minimal guidance.
5	Outcomes of the Programme: <ul style="list-style-type: none"> • To produce young professionals, educators and researchers with solid foundations in key linguistic concepts in the field of Language and Linguistics. • To bring patience, tolerance and better communication skills in the students through the knowledge of English Literature. • To pursue research and publication in a wide variety of areas including the discourse analysis of literary texts, evolving pedagogies in English literature and language together with their composite use in theory and practice..
6	Rationale for the Programme: The Department of English at Bahria University intends to offer BS English in both English Literature and Linguistics. The program is guided by the aim to train students to undertake independent research with minimal guidance; and to equip students with a wide range of transferable cognitive, practical and key skills, and a foundation for further study, employment and lifelong learning. The program introduces students to contemporary approaches in the domains of language/literature.
7	Brief Description of the Programme: The Bachelors program in English Language and Literature aims to cultivate an appreciation of English Language and Literature through reading, writing, researching, and thinking about texts in the widest context in the service of a rich and meaningful life. The four years Bachelor

	<p>program is divided into eight semesters and students are required to complete 135 credit hours with a minimum of 2 CGPA. Students are also encouraged to carry out formal research by opting research thesis in lieu of 6 credit hours of elective courses. The students are awarded the Bachelor's degree after completion of six weeks' internship and twenty hours of community work.</p> <p>The literature courses are based on traditional as well as innovative and creative approaches. The students study most of the established topics like classical and romantic poetry, drama, conventional novels and prose. At the same time, they have courses related to the in-depth study of the genre of short story, feminist poetry, Shakespearean drama and the art of short story writing. The course on Practical Criticism and Critical Thinking incorporate the modern paradigms of Stylistics.</p> <p>The language component includes courses related to Introduction to Linguistics, TEFL, Phonetics and Phonology, Morphology, Syntax, Grammar, Discourse Analysis and Pragmatics. The endeavor is to produce young professionals, educators and researchers with solid foundations in key linguistic concepts in the field of Language and Linguistics.</p>
8	Duration: 4 Years (8 Semesters)
9	Venue(s): On Site/Off Site/Both On & Off Site (Tick one; if Off Site, give details) Department of Humanities and Social Sciences, Bahria University, Islamabad Campus, Shangrilla Road Islamabad.
10	Programme Scheduling Format: Twice a year
11	Proposed Date of Commencement: Spring- 2021
12	Mode of Study/Examination: Semester System
13	Additional Faculty Member(s) Required: (<i>Indicate if there is a requirement for additional faculty members, fulltime/visiting, along with qualifications.</i>) Existing Permanent Faculty will teach.
14	Additional Skilled-Worker(s) Required: (<i>Indicate if there is a requirement for additional Skilled Staff, fulltime/part-time, along with their qualifications/skill sets.</i>) Nil
15	Additional Classroom(s) required: (<i>The requirement is to include the number of classrooms and their capacities.</i>) 01 class room to start with.
16	Additional Requirement for Laboratories: (<i>The requirement is to include the number of laboratories, their equipment and their capacities.</i>) Nil
17	Additional Requirement for Books, Subscriptions, Memberships to Online Research Sites/ Repositories: 0,3 million per Anum.
18	Minimum Entry Level: 12 years of education (minimum 50% marks) from HEC recognized educational institutes
19	Admission Criteria: As per HEC/BU Policy
20	Additional/Different Examination Requirement <i>(Indicate if there will be any examination requirement, additional to or different from the BU Academic Rules or Examination Policy in vogue).</i> As per BU Policy
21	Number of Admissions Expected for First Intake: 20 to 30 students
22	Number of Admissions Planned/Expected for Subsequent Intakes: 40 students in total are expected in each subsequent semester
23	Referred by: (<i>delete which is inapplicable</i>) FBOS:
24	Complete Plan of Studies, inclusive of complete Roadmap: (<i>Attach as Annex 'A'</i>) Attached
25	Course Outlines, Descriptions, Pre-Requisites & Readings (Compulsory & Recommended) <i>(Attach as Annex 'A')</i> Attached

B. FINANCIAL DETAILS	
1	Source of Funding: BU: Fully
2	Degree Duration: Annual or Semester System: Semester: Minimum 8 semesters (4 years) Total Number of Credit Hours: 135
3	Expected fee to be charged based on Cost & Benefits Analysis: (show working) Fee is to be in uniformity with BSS program.
4	Expected Number of students for 1st & 2nd Intakes: 20 and 30 students
5	Expected Earning from first two Intakes (B5): (Show working) $80,000 \times 20 \text{ (1}^{\text{st}} \text{ intake)} + 80,000 \times 30 \text{ (2}^{\text{nd}} \text{ intake)} = 1.6 \text{ Million} + 2.4 \text{ Million} = 4 \text{ Million}$
6	Expected Earnings for the Next Five Years (B6): (show working) One semester earning: $50 \times 80000 = 4 \text{ million}$ Five years earning= $4 \times 10 = 40 \text{ million}$
7	Total Estimated Salaries of all Additional Human Resources per annum (B7): (Show working) Nil
8	Cost of Additional Laboratory Equipment/Tools (B8): (show working) Nil
9	Cost of Additional Classrooms (B9): (Include furniture, technical aids etc.) Nil
10	Cost of Additional Books, Subscription & Memberships to on-line Sites/Repositories (B10): (show details) 0.3 million/annum
11	Off-Site rental Expenses and Cost of other Fixtures (B11): (Show details) Nil
12	Miscellaneous Expenses required for Starting the Program (B12): <ul style="list-style-type: none"> - Advertisement: - Printing & Stationery: - Admin Cost: Any other - Total: 0.3 million
13	Annual Recurring Expenditures in Subsequent Years (B13): <ul style="list-style-type: none"> - Salaries: - Rentals: - Subscriptions/Memberships: - Advertisements: - Printing & Stationery: - Admin Cost Any other - Total: 0.5 million
14	Total Cost of the Programme (B14): B(12) = 0.3 Million
15	Net Cost of the Programme (B15): [Subtract B(1) from B(14)] B(14) – B(1) = 1.7 Million - 0 = 1.7 Million
16	Net Earnings in First Year (B16: [Subtract B(15) from B(5)] B(5) – B(15) = 4 Million - 1.7 million = -2.3 Million
17	Projected Annual Gross Earning in Subsequent Years (B 17): (show details & working; add 10% towards all expenses in subsequent years.) 1.7 million (incremental) (10 % of 1.7 million every year.)
18	Projected Annual Net Earning in Subsequent Years: [Subtract B(13) from B(17)] B(17) – B(13) = 1.7 million – 0.5 million = 1.2 Million

Total Credit Hours used: 135**1st Semester****CR (18)**

Course Codes	Course Title	Credit Hours	Pre-req
ENG 105	Functional English (English-I)	3	
PAK 102	Pakistan Studies	3	
ENG 108	Introduction to Literature-1 (Drama & Poetry)	3	
ENG 106	Introduction to Linguistics	3	
HSS 102	Introduction to Philosophy	3	
HSS 107	Introduction to Psychology	3	

2nd Semester**CR (18)**

Course Codes	Course Title	Credit Hours	Pre-req
ENG 120	English Writing Skills(English-II)	3	Functional English
ISL 102	Islamic Studies	3	
HSS 111	Introduction to International Relations	3	
ENG 110	History of English Literature-1 (Medieval to Romantics)	3	
MAT 105	Mathematics	3	
ENG 112	Phonetics and Phonology	3	

3rd Semester**CR (18)**

Course Codes	Course Title	Credit Hours	Pre-req
ENG 201	Oral Communication & Presentation Skills	3	
ENG 202	Morphology and syntax-1	3	
ENG 203	Introduction to Literature-2 (novel & prose)	3	Introduction to Literature-1 (Drama & Poetry)
BES 204	Introduction to Computer Application	3	
ECO 205	Economics	3	
MGT 206	Entrepreneurship	3	

4th Semester**CR (18)**

Course Codes	Course Title	Credit Hours	Pre- req
ENG 207	Advance Academic reading & writing skills	3	English Writing Skills(English-II)
DST 249	Human rights & citizenship	3	
ANT 230	Gender Studies	3	
ENG 210	Semantics	3	
ENG 211	History of English Literature-2 (Romantics to Present Age)	3	History of English Literature-1
QTM 105	Introduction to statistics	3	

5th Semester**CR (18)**

Course Codes	Literature (Major)	Linguistics (Major)	Course Codes	Pre-req
ENG 301	Visionary discourse (3)- compulsory	Visionary discourse (3) -compulsory	ENG 301	
ENG 302	Literary Criticism (3)	Morphology and syntax-II (3)	ENG 309	Morphology and syntax-I
ENG 303	Classical poetry (14-18 th century) (3)	Sociolinguistics (3)	ENG 310	
ENG 304	Novel (18-19 th century) (3)	Pedagogical Grammar (3)	ENG 311	
	Linguistics-1 (3)	Literature -1 (3)		
	Linguistics-2 (3)	Literature -2 (3)		

6th Semester**CR (15)**

Course Codes	Literature (Major)	Linguistics (Major)	Course Codes	Pre-req
ENG 305	Research Methodology (3)	Research Methodology (03)	ENG 305	
ENG 306	Literary Criticism and theory(3)	Discourse analysis (3)	ENG 312	Literary criticism
ENG 307	Classics in drama (3)	Psycholinguistics (3)	ENG 313	
ENG 308	Romantic poetry (19-20 th century) (3)	Lexical studies (3)	ENG 314	
	Linguistics-3 (3)	Literature -3 (3)		

7th Semester**CR (15)**

Course Codes	Literature (core)	Linguistics (core)	Course Codes	Pre-req
ENG 401	Contemporary literature-1 (poetry& drama) (3)	Stylistics (3)	ENG 405	
ENG 402	South Asian literature (3)	Language learning theories (3)	ENG 406	
ENG 403	American and Canadian literature (3)	Syllabus designing and testing (3)	ENG 407	
ENG 404	Translational theory and literary studies (3)	TEFEL-1 (3)	ENG 408	
	Electives 1 and 2 (3+3)	Electives 1 and 2 (3+3)		

8th Semester**CR (15)**

Course Codes	Literature (Core)	Linguistics (Core)	Course Codes	Pre-req
ENG 409	Contemporary literature-2 (Prose & Novel) (3)	TEFEL-2 (3)	ENG 412	Contemporary literature-1(poetry& drama) TEFEL-1
ENG 510	Post-colonial literature (3)	Pragmatics(3)	ENG 413	
ENG 411	Literary discourse & journalistic writing (3)	Introduction to Applied Linguistics (3)	ENG 414	
	Electives 3 and 4 (3+3)	Electives 3 and 4 (3+3)		
	Research Thesis/Project (3)	Research Thesis/Project (3)		

Total Credit Hours: 135**NOTE:**

- According to prospectus of the year 2017, students of 5th semester of BS (English) Programme are required to choose 2 major courses from the given 4. Students interested to specialize in English **Literature or Linguistics** in the fourth academic year i.e. (7th and 8th semesters) are required to fulfill the requirement of 18 Credit Hours (CR) in the 5th semester by taking 12 CR from **Literature** courses while 6 CR from **Linguistics** courses. The same process needs to be followed by students aiming to specialize in **Linguistics**. i.e. (12 CR from linguistics courses while 6 CR from literature courses).
- In the 6th semester, students who wish to specialize in **Literature** are required to select 12 CR from the **Literature** courses while 3 CR from the **Linguistics** courses. The same process needs to be followed by the students aiming to specialize in **Linguistics**. i.e. (12 CR from linguistics courses while 3 CR from literature courses).
- 3 Core are to be selected out of 4, making 9 CH. (In 7th semester)

- 2 Core are to be selected out of 3, making 6 CH. (In 8th semester)
- It is mandatory for the students from both Literature & Linguistics to complete research, of 3 CH, in 8th semester.
- University is authorized to offer any course (Core) out of the above mentioned, depending on the available expertise

ELECTIVES FOR LITERATURE

Course Codes	Course Title	Credit Hours
ENG 515	Western Literature	3
ENG 516	World Literature	3
ENG 517	Feminist Literature	3
ENG 518	Comparative Studies	3

ELECTIVES FOR LINGUISTICS

Course Codes	Course Title	Credit Hours
ENG 520	English for Specific Purposes	3
ENG 521	Translational Studies	3
ENG 522	English Language Teaching	3
ENG 523	Media Discourse Analysis	3

Appendage 4016**LAUNCH OF NEW PROGRAM – MASTER OF SCIENCE IN GOVERNMENT AND PUBLIC POLICY - BUIC**

A. ACADEMIC DETAILS	
1	Faculty/Department: Department of Humanities and Social Sciences, Bahria University, Islamabad Campus (BUIC)
2	Name of the Program: Master of SCIENCE (MS) in Government and Public Policy (GPP)
3	Mission of the Program: To equip the scholars with relevant tools and skills to undertake academic research and teaching in the field of Public Policy
4	Objectives of the Program The core objective of MS program is to contribute to bringing forward a new generation of scholars equipped with profound knowledge of discipline with an ability to advance scholarship in areas of their specialization. In particular: <ol style="list-style-type: none"> 1. Students will be encouraged to develop a critical understanding of major debates, theories, and strategic interventions and of the skills to analyze the issues, and to design and assess interventions aimed at tackling these issues. 2. An essential part of this process is to develop skills in research methodology, which will be applied in a thesis prepared as a requirement for the master's degree. 3. The two-year MS in Government and Public Policy will provide them with a rigorous and critical introduction to public policy as a process of managed and unmanaged change in the societies and institutions of the global South. The Program is an excellent preparation for a career in public policy or practice or for further study in the field.
5	Outcomes of the Program A thorough understanding about classical and recent theoretical knowledge in the areas of Public Policy and cross cutting disciplines. <ul style="list-style-type: none"> • Ability to draft projects documents, to be able to work in project implementation team as well as to successfully monitor and evaluate and eventually to determine the success and failures of development Interventions. • To be able to understand the research philosophy along with methodology sophistication and familiarity with academic writing process
6	Rationale for the Program It will add diversity to the programs being conducted at Islamabad Campus of Bahria University. Islamabad is the hub of government offices, donor agencies, NGOs, think tanks and international missions and hence there is continuous need of trained human resource in the field of Public Policy. Bahria University have successfully run the Development Studies Program at undergraduate program that means we already have a strong foundation of students who intend to opt for public program at Bahria University. Given the demand of Program PIDE have even started morning and evening batches of Government & Public Policy program and still the demand is unmet. The start of MS program in GPP will fulfill the existing gap in the discipline. The department has a faculty member who would be

	completing his PhD in Public Policy from Oregon State University within a year. However, we will need another one in Public Policy which fulfills the HEC/BU requirements to start a new MS program.
7	<p>Brief Description of the Program</p> <p>Public organizations today – and those organizations that interact with them – are faced with vast amounts of information and competing opinions with different calls to urgent action. The economists will advise whether a policy proposal idea is efficient; the lawyers whether it is permitted; the financiers whether it is affordable and the philosophers whether it is right. But as a mid-level or senior-level policymakers need to understand and navigate between these different opinions in order to make ‘good’ policy. This is what we call the craft of government. With political polarization becoming the defining issue of our time there is a pressing need to develop a more precise understanding of the complex incentives and limitations that shape the policy behavior of modern governments. In this course we develop an in-depth understanding of what public policy is and why we sometimes justify government action to solve social problems and other times do not. We learn each step of the policy process and evaluate the characteristics of effective and ineffective policies. We also examine the environments in which poorly designed public policies may have created unexpected and negative outcomes such as inequality or political capture. This course explores many of the paradoxes inherent in public policy by focusing on the controversial topics that animate today's most meaningful public debates such as healthcare police reform gun ownership homelessness and education.</p> <p>Government and Public Policy: An insight into program</p> <p>Introduction to Public Policy covers a wide range of topics, from the norms and values informing democratic policymaking to the basics of cost-benefit and other tools of policy analysis. Though emphases will differ based on instructor strengths, all sections will address the institutional arrangements for making public policy decisions, the role of various actors—including nonprofit and private-sector professionals—in shaping policy outcomes, and the fundamentals (and limits) of analytic approaches to public policy.</p> <p>The MPP begins with a carefully planned program of activities during the induction period which introduces policy making and advice on how to derive the greatest benefit from the MPP experience. The curriculum for the rest of the course is delivered via a series of lectures, seminars, case studies and workshops across three terms, and the summer project which is an opportunity to apply knowledge and skills learned through the program in a public policy context.</p> <p>Policy challenges are becoming more complex every day and public leaders need to be able to use expertise from different specialist fields to find innovative solutions. For this reason, the curriculum integrates insights and approaches from a diverse range of academic disciplines and also includes modules delivered by leading policy practitioners.</p> <p>The current curriculum includes the following compulsory modules:</p> <ol style="list-style-type: none"> 1. Introduction to Public Policy 2. Public Policy and Institutions 3. Political Economy of Public Policy 4. Advance Research Methods and Techniques

	<p>Students can also personalize their learning to meet professional needs by choosing from a number of options as well as deepen their professional and practical skills through modules such as negotiation, communications, private finance, and entrepreneurship. Students will also get to further sharpen their skills and exposure to real world policy challenges through a 6–8-week summer internship. It is expected that MPP students will be fully committed to their studies and take responsibility for their active participation in all aspects of the program.</p> <p>Alongside teaching, which can include lectures, case studies, workshops, and seminars, students are encouraged to learn from each other, for example by forming study groups and arranging student-led talks and events. Students will also be expected to undertake some self-directed study, including required and supplementary readings and case studies. The students will be offered course work worth 24 credit hours followed by a dissertation worth 6 credit hours.</p>
8	Duration: Minimum 2 Years (4 Semesters)
9	Venue(s): On Site/Off Site/Both On & Off Site (Tick one; if Off Site, give details) Department of Humanities and Social Sciences, Bahria University, Islamabad Campus, Shangrila Road Islamabad.
10	Program Scheduling Format: Evening Bi-Semester
11	Proposed Date of Commencement: Fall 2022
12	Mode of Study/Examination: Semester System
13	Additional Faculty Member(s) Required: (<i>Indicate if there is a requirement for additional faculty members, fulltime/visiting, along with qualifications.</i>) 2 PhD s
14	Additional Skilled-Worker(s) Required: (<i>Indicate if there is a requirement for additional Skilled Staff, fulltime/part-time, along with their qualifications/skill sets.</i>) Nil
15	Additional Classroom(s) required: (<i>The requirement is to include the number of classrooms and their capacities.</i>) One classroom with a capacity of 10-15 students
16	Additional Requirement for Laboratories: (<i>The requirement is to include the number of laboratories, their equipment and their capacities.</i>) Nil
17	Additional Requirement for Books, Subscriptions, Memberships to Online Research Sites/ Repositories: <ol style="list-style-type: none"> 1. Access to the most relevant Public Policy Journals. 2. Recommended books that are mentioned in the course roadmap
18	Minimum Entry Level: 16 years of education from HEC recognized educational universities / institutes, students with background of. <ul style="list-style-type: none"> • Development Studies • Political Science • Defense and Strategic Studies • Defense and Diplomatic Studies • Peace and Conflict Studies • Government and Public policy • Pakistan Studies • Area Studies • International Relations • Media Studies • History • Economics

	<ul style="list-style-type: none"> Any other relevant discipline from Social Sciences
19	Admission Criteria: As per HEC/BU Policy
20	Additional/Different Examination Requirement <i>(Indicate if there will be any examination requirement, additional to or different from the BU Academic Rules or Examination Policy in vogue).</i> As per BU Policy
21	Number of Admissions Expected for First Intake: 10-12 students
22	Number of Admissions Planned/Expected for Subsequent Intakes: 10 % increase every semester
23	Referred by: (delete which is inapplicable) DBOS: held on 29 th July 2021
24	Complete Plan of Studies, inclusive of complete Roadmap: (Attach as Annex 'A') Attached
25	Course Outlines, Descriptions, Pre-Requisites & Readings (Compulsory & Recommended) (Attach as Annex 'B') Attached

B. FINANCIAL DETAILS	
1	Source of Funding: BU: Fully
2	Degree Duration: <u>Annual or Semester System:</u> Semester: Minimum 4 semesters (2 years) Total Number of Credit Hours: 30
3	Expected fee to be charged based on Cost & Benefits Analysis: (show working) Fee rate per credit hour: Rs. 4685
4	Expected Number of students for 1st & 2nd Intakes: 12-15 students
5	Expected Earning from first two Intakes (B5): (Show working) a. $96220 \times 12 \text{ (1}^{\text{st}} \text{ intake - Semester 1)} + 61,220 \times 12 \text{ (1}^{\text{st}} \text{ intake - Semester 2)} = 9,62,200 + 6,12,200 = 1.574400 \text{ million}$ b. $96220 \times 15 \text{ (2}^{\text{nd}} \text{ intake - Semester 1)} + 61,220 \times 15 \text{ (2}^{\text{nd}} \text{ intake - Semester 2)} = 11,54,640 + 7,34,640 = 1.889280 \text{ million}$ Total: 1.574400 + 1.889280 = 3.436720 million
7	Total Estimated Salaries of all Additional Human Resources per annum (B7): (Show working) Salary of 2 PhDs = 0.15 million x 24 = 3.6 million/annum
8	Cost of Additional Laboratory Equipment/Tools (B8): (show working) Nil
9	Cost of Additional Classrooms (B9): (Include furniture, technical aids etc) Nil
10	Cost of Additional Books, Subscription & Memberships to on-line Sites/Repositories (B10): (show details) 0.5 million/annum
11	Off-Site rental Expenses and Cost of other Fixtures (B11): (Show details) Nil
12	Miscellaneous Expenses required for Starting the Program (B12): <ul style="list-style-type: none"> - Advertisement: - Printing & Stationery: - Admin Cost: Total: 0.5 million
13	Annual Recurring Expenditures in Subsequent Years (B13): <ul style="list-style-type: none"> - Salaries: - Rentals: - Subscriptions/Memberships:

	<ul style="list-style-type: none"> - Advertisements: - Printing & Stationery: - Admin Cost
14	Total Cost of the Program (B14): [Add B (7) to B (12)] $B (7) + B (12) = 3.6 \text{ million} + 0.5 \text{ million} = 4.1 \text{ million}$
15	Net Cost of the Program (B15): [Subtract B (1) from B (14)] $B (14) - B (1) = 4.1 \text{ million} - 0 = 4.1 \text{ million}$
16	Net Earnings in First Year (B16): [Subtract B (15) from B (5)] $B (5) - B (15) = 3.436720 \text{ million} - 4.1 \text{ million} = - 0.663280 \text{ million}$
17	Projected Annual Gross Earning in Subsequent Years (B 17): (<i>show details & working; add 10% towards all expenses in subsequent years.</i>) 3.780392 million (incremental)
18	Projected Annual Net Earning in Subsequent Years: [<i>Subtract B (14) from B (17)</i>] $B (17) - B (13) = 3.780392 \text{ million} - 4.1 \text{ million} = - 0.319,608 \text{ Million}$

MS - GOVERNMENT AND PUBLIC POLICY (GPP)

Introduction to Public Policy covers a wide range of topics, from the norms and values informing democratic policymaking to the basics of cost-benefit and other tools of policy analysis. Though emphases will differ based on instructor strengths, all sections will address the institutional arrangements for making public policy decisions, the role of various actors-including nonprofit and private-sector professionals-in shaping policy outcomes, and the fundamentals (and limits) of analytic approaches to public policy.

The MS - GPP begins with a carefully planned program of activities during the induction period which introduces policy making and advice on how to derive the greatest benefit from the MS -GPP experience. The curriculum for the rest of the course is delivered via a series of lectures, seminars, case studies and workshops across three terms, and the summer project which is an opportunity to apply knowledge and skills learned through the program in a public policy context.

Policy challenges are becoming more complex every day and public leaders need to be able to use expertise from different specialist fields to find innovative solutions. For this reason, the curriculum integrates insights and approaches from a diverse range of academic disciplines and also includes modules delivered by leading policy practitioners.

The current curriculum includes the following compulsory modules:

1. Introduction to Public Policy
2. Public Policy and Institutions
3. Political Economy of Public Policy
4. Advance Research Methods and Techniques

Students can also personalize their learning to meet professional needs by choosing from a number of options as well as deepen their professional and practical skills through modules such as negotiation, communications, private finance, and entrepreneurship. Students will also get to further sharpen their skills and exposure to real world policy challenges through a 6–8-week summer internship. It is expected that MPP students will be fully committed to their studies and take responsibility for their active participation in all aspects of the program.

Alongside teaching, which can include lectures, case studies, workshops, and seminars, students are encouraged to learn from each other, for example by forming study groups and arranging student-led talks and events. Students will also be expected to undertake some self-directed study, including required and supplementary readings and case studies.

SCHEME OF STUDIES FOR MS PROGRAM

MS 2-Years Program (30 credit hours) Following is the scheme of studies for two years program in MS Government and Public Policy (GPP) having course work of 24 credit hours along with a thesis of 6 credit hours respectively:

1st Semester- MS 1st Year

S No	Course Codes	Course Title	Credit Hours
1	GPP 501	Introduction to Public Policy	3
2	GPP 502	Public Policy and Institutions	3
3		Optional-1	3
4		Optional -2	3
		Total	12

2nd Semester- MS 1st Year

S No	Course Codes	Course Title	Credit Hours
1	GPP 503	Political Economy of Public Policy	3
2	GPP 504	Advance Research Methods & Techniques	3
3		Optional-3	3
4		Optional-4	3
		Total	12

Semester	Course Code	Course Title	Credits Hours
Third and Fourth	THS 501	Thesis	6

DETAIL OF CORE AND OPTIONAL COURSES**CORE COURSES**

S NO	Course Codes	Course Name	Credit Hours
1	GPP 501	Introduction to Public Policy	3
2	GPP 502	Public Policy and Institutions	3
3	GPP 503	Political Economy of Public Policy	3
4	GPP 504	Advance Research Methods & Techniques	3

OPTIONAL COURSES

S No	Course Codes	Course Name	Credit Hours
1	GPP 505	Social Policy	3
2	GPP 506	Urban Development	3
3	GPP 507	Health Policy	3
4	GPP 508	Evidence in Public Policy	3
5	GPP 509	Global and Local Governance	3
6	GPP 510	Migration Governance in Times of Crisis	3
7	GPP 511	Public Policy for Agrarian Markets	3
8	GPP 512	Data and Development	3
9	GPP 513	Qualitative Methods for Public Policy	3
10	GPP 514	Law and Public Policy	3
11	GPP 515	Public Policy of gender-sensitive governance	3
12	GPP 516	The Public Policy of Elections	3
13	GPP 517	Media and Public Policy governance	3

DESCRIPTION OF CORE COURSES

Course Name	Introduction to Public Policy	Prepared on	
Course Code	GPP 501		
Credit Hours	3		
Course Prerequisite		Revised on	
Prerequisite Code			
Course Type	MS		
Program	MS – Government and Public Policy		
Semester	1 st		

Course Description

With political polarization fastly becoming the defining issue of our time, there is a pressing need to develop a more precise understanding of the actions of government and the intentions that determine such actions. In this class, we will develop an in-depth understanding of what public policy is and why we sometimes justify government involvement in solving social problems. We will learn how to identify the characteristics of effective and ineffective policies by examining the conditions under which government actions may stifle intergenerational mobility, equal opportunity, and better social and economic outcomes. We will also examine the environments in which poorly designed public policies may create unexpected consequences and negative outcomes, such as exclusion or political capture. This course will explore many of the paradoxes inherent in public policy research by focusing on the highly controversial topics that animate today's most meaningful public debates, such as gun ownership, homelessness, education, health care, and welfare policies. Skills to be developed Students will be required to critically engage with qualitative and quantitative academic literature, identifying the implicit assumptions, veiled ideology, or measurement choices that drive different policies. By the end of this course, students will be able to elucidate the scholarly theories behind policy design, and know how to formulate, implement, and evaluate a policy. To put theory into practice, students will work in small teams to design and conduct their own policy analysis on a topic of their choosing. Policy analyses will be presented during course and should stimulate a thoughtful and informed debate about the challenges of the policy area.

Textbook and References**Textbook:**

Introduction to Public Policy by Charles Wheelan

Reference Books

Understanding Public Policy by Thomas R. Dy

Grading Policy

	Assessment Instruments	Percentage	
Quizzes		15%	
Assignments		20%	
Mid Term Exam		25%	
Final Exam		40%	

Week-wise Course Outline		
week / Session	Contents	Activities / Learning Outcome
Week 1	What is Public Policy?	An introduction to the discipline and its various dimensions.
Week 2	What are Public Policy Studies?	Acquainting students with the public policy studies and their significance in the changing governing systems.
Week 3	Public Policy Analysis	Introduction to Public Policy Analysis and the significance of various PP theories.
Week 4	Key approaches to Public Policy	Introducing students with the key approaches to Public Policy – Introducing with the best practices in public policy formation.
Week 5	Public Policy Process	Introducing students with the policy making process
Week 6	Public Policy and Good Governance	Introduce students with the concept of good governance and how it can be achieved by using public policy formulation
Week 7	Public Policy and e-governance	Introducing students to the public policy provisions and e-governance (digital governance)
Week 8	Public Policy and Accountability Processes	Introducing students with the accountability processes in Public Policy making.
Week 9	Mid Term Exams	Mid-Term Exams
Week 10	Public Policy and Local Governance	Enabling students to learn the role local governance systems play in public policy provisions.
Week 11	Public Policy and Deliberative Advocacy	Introducing students with the advocacy mechanisms to lobby for policy reforms.
Week 12	Economic Policy	Introducing students with the economic policy making – core concept of Macroeconomic policy regime
Week 13	Economic Policy – II	As above
Week 14	Policy Evaluation	Introducing students with public policy evaluation processes
Week 15	Policy Evaluation – II	Introduction to Policy evaluation frameworks
Week 16	Revision	-

Readings.

Kraft, M. E. & Furlong, S. R. (2018). Public policy: Politics, analysis, and alternatives. Sixth edition. Sage and CQ Press. Chapter 1, (pp. 2-11; 15-27; 30-31).

Birkland, T. A. (2011). An introduction to the policy process: Theories, concepts and models of public policy making. Third edition. Routledge. Chapter 3, (pp. 58-91)

Hausman, D. (2016). Economic analysis, moral philosophy, and public policy. Third edition. Cambridge University Press. Chapters 7-9.

- Kraft, M. E. & Furlong, S. R. (2018). Public policy: Politics, analysis, and alternatives. Sixth edition. Sage and CQ Press. Chapter 2, (pp. 42-73).
- Weimer, D. L. & Vining, A. R. (2017). Policy analysis: Concepts and practice. Sixth edition. Routledge. Chapter 14, (pp. 325-339).
- Birkland, T. A. (2011). An introduction to the policy process: Theories, concepts and models of public policy making. Third edition. Routledge. Chapter 3, (pp. 58-91)
- Acemoglu, D., Robinson, J. A. & Ragnar, T. (2013). Why do voters dismantle checks and balances? *Review of Economic Studies*, 80, (pp. 845-875).

Note: -

- Student's preparations for case studies and participation in discussions can be selectively taken as their assignments for grading or instructor may develop separate mechanism.
- Class activities would predominantly include discussions, developing role models by the students, presentations by student groups and case studies.

Course Name	Public Policy and Institutions	Prepared on	
PPCourse Code	GPP 502		
Credit Hours	3		
Course Prerequisite			
Prerequisite Code		Revised on	
Course Type	MS		
Program	MS – GPP		
Semester	1 st		

Course Description

The Institutions and Governance major enables students to study the formal and informal rules that societies use to govern themselves at the local, national, and global levels. By focusing on institutions and governance as a guiding framework, students can better understand the dynamics of wealth and poverty, innovation versus technological/economic stagnation, and stability versus turmoil in different states and societies. Students in this major will be exposed to the deep political science, economic, sociological, historical and anthropological explorations of institutional designs in a variety of constructs, such as governments, interest groups and social movements, media, and religion, among others. By their senior year, students will be able to speak authoritatively on the comparative theory of institutions, the history of institutional and policy development, the drivers of institutional change, and distributional effects of institutional choices. Particular attention will be paid to the challenges of governance, such as the processes and structures that societies adopt to manage their collective affairs, with an emphasis on the implementation and evaluation of government programs.

The world is more and more interconnected at a variety of levels and students are going to need a better understanding of the institutions that govern this global integration. The more that students can identify, analyze, and engage with global institutions and understand their governing processes, the more they will be able to navigate these complexities.

Textbook and References

Textbook:

Making Public Policy: Institutions, Actors, Strategies by Professor Mark Considine

Reference Books:

Complexity, Institutions and Public Policy: Agile Decision-Making in a Turbulent World
by Graham Room

Grading Policy

Assessment Instruments	Percentage
Quizzes	15%
Assignments	20%
Mid Term Exam	25%
Final Exam	40%

Week-wise Course Outline

week / Session	Contents	Activities / Learning Outcome
Week 1	Institutions: Agents of Change	An introduction to the various types of institutions and their role in public Policy
Week 2	Extractive vs. Inclusive Institutions	Enabling students to clearly distinguish between the two types of institutions and their characteristics

Week 3	Economic vs Political Institutions	Highlighting the role of economic and political institutions and their role in policy implementation
Week 4	Federalism and state policies: Institutional arrangements and policy variations	Introducing students with the scope of federalism and various state policies w.r.t. institutional arrangement and contextual variations.
Week 5	Public Policy, Institutions, and Income distribution	Introducing students with the concept of equitable income distribution to the smaller units – NFC awards
Week 6	Institutional frameworks and service delivery mechanisms	Introducing students with the institutional frameworks of Pakistan and public service delivery mechanisms. During this week, we would organize a seminar and invite guest scholars to trace the linkages of institutional frameworks and public service delivery mechanisms for good governance.
Week 7	Civil Services and Public Service: Gaps and Reforms	This topic will introduce students with the civil service reforms that are often talked about in seminars on good governance and public reforms. Students will be able to draw key lessons for civil service reforms.
Week 8	Institutional accountability and good governance	Students will be able to learn about various political and economic aspects of the accountability process. Additionally, students will be able to learn the characteristics of good governance.
Week 9	Mid-Term Exams	
Week 10	Rent Seeking and Institutional Integrity	Week 10 is an extension of week 8 – It explores the rent seeking patterns through analyzing various reports on rent seeking. The topic will help students to grasp the concept of corruption through various theoretically nuanced perspectives.
Week 11	Theories of Governance	Students will be able to learn governance theories from across the globe. However, the focus will be to study governance in a localized context with examples from neighboring and those from the same income group, and the same broad value set etc.
Week 12	Public Finance and Devolution	Students will be able to discuss topics from Public Finance including the Role of Public Sector in Economics; Size and Scope of Government; Efficiency and Equity
Week 13	Private Sector and Regulatory Policy	This topic introduces the students will the role of the private sector and the settings conducive to make private sector efficient. It also highlights the role of private sector in the development of economy. In addition, it will explain the role and conduct of political and state institutions

		including courts, legislatures, executives, bureaucracies, and social movements
Week 14	Network Governance	Students will learn a network approach to problem solving and decision-making in the public sector. The concept of policy networks and meta-governance forms a central strand of the topic.
Week 15	Government and Foreign Policy	Students will analyze strategic decisions made by Pakistan government in the field of politics and international relations. Led by course convenor and policy experts from relevant fields, participants of this course will explore the foreign policy related events, analyze the context, and evaluate the socio-economic consequences
Week 16	Revision	

Readings.

- Potts, D. (2005) 'Project Identification and Design' and 'Project Identification and Formulation' in 'Project Planning and Analysis for Development'. Viva Books.
- Chap. 6 The Project Team' in 'Successful Project Management: Insights from Distance Education Practices. Virtual University for the Small States of the Commonwealth (VUSSC)
- Baker, J. (2000) Defining Concepts and Techniques for Impact Evaluation. In 'Evaluating the Impact of Development Projects on Poverty: A Handbook for Practitioners'. The World Bank. Washington D.C.
- Platteau, J. (2004). Monitoring Elite Capture in Community-Driven Development. *Development and Change*. 35 (2).

Note: -

- Student's preparations for case studies and participation in discussions can be selectively taken as their assignments for grading or instructor may develop separate mechanism.
- Class activities would predominantly include discussions, developing role models by the students, presentations by student groups and case studies.

Course Name	Advanced Research Methods and Techniques	Prepared on	
Course Code	GPP 504		
Credit Hours	3	Revised on	
Course Prerequisite			
Prerequisite Code			
Course Type			
Program			
Semester			
Course Description			
<p>The aim of the course is to provide students with the methodological skills necessary for them to carry out independent research. Throughout the year, methodological and design considerations are integrated with qualitative and quantitative techniques. Students will be trained about different traditions of academic writings along with training on qualitative and quantitative tools. Statistical theory is not emphasized; instead, students are trained to be consumers and users of both qualitative and quantitative data. Applied linkages are developed through the extensive use of the Views and SPSS data analysis package.</p>			
Textbook and References			
Textbook: <ul style="list-style-type: none"> Introducing Research Methodology by Uwe Flick Hans C. Jenkins-Smith. (2016) Quantitative Research methods for political science, public policy, and Public Administration. Reference Books: Research Methods: The Basics: 2nd Edition by Nicholas Walliman.			
Grading Policy			
	Assessment Instruments	Percentage	
	Quizzes	15%	
	Assignments	20%	
	Mid Term Exam	25%	
	Final Exam	40%	
Week-wise Course Outline			
week / Session	Contents	Activities / Learning Outcome	
Week 1	Theory and Empirical Social Science	Introducing students with the theory of empirical calculations and explorations in the domain of social sciences.	
Week 2	Research Design	Introducing students with the various types of research designs used in Public Policy studies.	
Week 3	Exploring and Visualizing Data	This week students will learn the characterization of various data sets. They will be able to measure the skewness, variance, SD, Central Tendency and understand the logic behind calculus.	
Week 4	Probability	Through this week, students will be able to learn the probability and its logic. Students will be able to find probabilities of public policy related occurrences with the normal curve.	

Week 5	Inference	Students will be able to learn about sampling, and population samples. They will be able to learn the sampling strategies as well as the methodological techniques for sampling.
Week 6	Association of Variables	During week six, students will be able to learn the cross tabulation, Covariance, Correlation, and Scatterplots. They will be able to estimate, cross tabulate and scatterplot the data. Additionally, they would be able to draw covariance and correlation from complex data sets.
Week 7	Simple Regression: The Logic of Ordinary Least Squares Estimation	Students will be able to learn the theoretical foundations of OLS method and how regression is run using various calculus formulae and modelling schemes.
Week 8	Linear Estimation and Minimizing Error	This week will introduce students with linear estimation and minimizing error using derivatives. Students will be able to
Week 9	Mid term Exams	
Week 10	OLS Assumptions and Simple Regression Diagnostics	Students will recap the modelling assumptions alongside conducting simple regression diagnostics. In addition they would be able to conduct the residual diagnostics and analysis.
Week 11	Introduction to Multiple Regression	Students will be introduced with Matrix Algebra and multiple regression.
Week 12	The Logic of Multiple Regression	Students will be able to learn the theoretical specifications behind the logic of multiple regression. Hypothesis testing and t-tests.
Week 13	Multiple Regression and Model Building	Students will be able to learn the techniques of model building, theory and hypothesis testing. In addition they will be able to learn about the empirical indicators pertaining to public policy and governance.
Week 14	Topics in Multiple Regression	In this week, students will be able to learn how to insert a dummy variable in a data set. What are the interaction effects? And what are standardized regression coefficients
Week 15	The Art of Regression Diagnostics	In the second last week, students will revisit the art of regression diagnostics while additionally learning normality of the residuals, multicollinearity, and independence of E.
Week 16	Revision – Feedback!	

Readings.

Whetten, D. A. (1989). What constitutes a theoretical contribution? *Academy of Management Review*, 14(4), 490-495..

Walliman, N. (2011). Research methods: The basics. London: Routledge.

Green, J. P., Tonidandel, S. & Cortina, J. M. (2016). Getting through the gate: Statistical and methodological issues raised in the reviewing process. *Organizational*

Whetten, D. A. (1989). What constitutes a theoretical contribution? *Academy of Management Review*, 14(4), 490-495.

Note: -

- Student's preparations for case studies and participation in discussions can be selectively taken as their assignments for grading or instructor may develop separate mechanism.
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LAUNCH OF NEW PROGRAM - BACHELOR OF SCIENCE IN MATHEMATICS AT BUKC

A. ACADEMIC DETAILS	
1	Faculty/Department: Department of Humanities and Social Sciences, Bahria University, Karachi Campus BUKC)
2	Name of the Programme: Bachelor of Science (BS) in Mathematics
3	Mission of the Programme: The role of Mathematics is inevitably important in today's world. Problem solving, thinking critically and logically, and high level quantitative and numerical computational skills are highly required attributes in most of the organizations. BS Mathematics helps students to be highly numerate. Students grasp knowledge to think clearly and logically to analyze the situations and organize them accordingly. Additionally, students develop special skills which they can use in devising solutions to complex problems. Having equipped with such skills enable graduates to seek creative careers in applied science, physics, banking, etc.
4	Objectives of the Programme: <ul style="list-style-type: none"> • To acquire a basic body of mathematical knowledge that will provide the student with a strong foundation for further study and/or for a career in Mathematics or in other technical or scientific fields. • To correlate with other degree program such as Computer Science, Engineering, Medical sciences, Business Studies and research related programs. • To develop fundamental mathematical skills and the ability for independent mathematical learning and reasoning. • To be familiar with proof techniques and know how to apply the laws of logic in mathematical proofs; understand and communicate concepts and mathematical ideas with clarity and coherence; use computational tools to solve mathematical problems; create/use mathematical models to solve real problems.
5	Outcomes of the Programme: <ul style="list-style-type: none"> • Upon completion of the BS Mathematics program, majors will be able to: • Communicate mathematical principles and ideas with clarity and coherence, both written and verbally, demonstrating communication skills to be used in any future career. • Demonstrate logical argumentation, analysis and synthesis skills through writing by organizing correct ideas and evidence through relevant examples, figures and tables consistent with a clearly defined purpose. • Meet diverse goals ranging from applied work in science or industry.
6	Rationale for the Programme: A degree in Mathematics is a professional pathway for those interested in solutions and solving real-world problems. It's an important discipline to study because many roles require a basic or advanced understanding of mathematical concepts.
7	Brief Description of the Programme: This program includes brief description about the basic as well as advanced and applied courses of Mathematics. In order to develop strong base of physical sciences, courses of physics, economics, Computer Science, Engineering and research related are also included in it. These courses will provide strong base to apply mathematics in different fields. The BS Mathematics assists students to enhance their quantitative skills which are highly valued as a mathematician. This degree prepares students for a career in the public and private sectors. The graduates can pursue for further studies, or in work finance, consultancy,

	advertising, management, banking, marketing, accountancy, commerce, education, research and IT.
8	Duration: 4 Years (8 Semesters)
9	Venue(s): On Site/Off Site/Both On & Off Site (Tick one; if Off Site, give details) Department of Humanities and Social Sciences, Bahria University, Karachi Campus
10	Programme Scheduling Format: Twice a year
11	Proposed Date of Commencement: Fall 2022
12	Mode of Study/Examination: Semester System
13	Additional Faculty Member(s) Required: (<i>Indicate if there is a requirement for additional faculty members, fulltime/visiting, along with qualifications.</i>) Existing Permanent Faculty will teach. No Visiting faculty member is required to initiate the program but as the program will mature, some VFM will be required at later stage.
14	Additional Skilled-Worker(s) Required: (<i>Indicate if there is a requirement for additional Skilled Staff, fulltime/part-time, along with their qualifications/skill sets.</i>) Nil
15	Additional Classroom(s) required: (<i>The requirement is to include the number of classrooms and their capacities.</i>) <ul style="list-style-type: none"> • Classrooms in Sir Syed block (in campus) are available. • No additional Classroom is required till 4th semester.
16	Additional Requirement for Laboratories: (<i>The requirement is to include the number of laboratories, their equipment and their capacities.</i>) Labs are available in the campus
17	Additional Requirement for Books, Subscriptions, Memberships to Online Research Sites/ Repositories: BUKC library may fulfill the requirements.
18	Minimum Entry Level: The candidates seeking admission must secure at least 50% marks in aggregate in F.Sc. / ICS / DAE / General Science with major subject Mathematics. OR Any other examination of Foreign University/ institution/ Examining Body, equivalent to intermediate with Mathematics, Equivalence and percentage of Marks will be determined by IBCC
19	Admission Criteria: As per HEC/BU Policy
20	Additional/Different Examination Requirement (<i>Indicate if there will be any examination requirement, additional to or different from the BU Academic Rules or Examination Policy in vogue.</i>) As per BU Policy
21	Number of Admissions Expected for First Intake: 20 students
22	Number of Admissions Planned/Expected for Subsequent Intakes: 25-35 students in total are expected in each subsequent semester
23	Referred by: HOD, Department of Humanities and Social Sciences, Bahria University, Karachi Campus (BUKC) through FBOS
24	Complete Plan of Studies, inclusive of complete Roadmap: (<i>Attach as Annex 'A'</i>) Attached
25	Course Outlines, Descriptions, Pre-Requisites & Readings (Compulsory & Recommended) (<i>Attach as Annex 'A'</i>) Attached

B. FINANCIAL DETAILS																																																
1	Source of Funding: BU: Fully																																															
2	Degree Duration: Annual or Semester System: Semester: Minimum 8 semesters (4 years) Total Number of Credit Hours: 126																																															
3	Expected fee to be charged based on Cost & Benefits Analysis: (show working) <ul style="list-style-type: none"> • Tuition fee per Semester :Rs. 70,000/- • Admission fees & other charges at the time of admission: Rs. 40,000/- • Total fees at the time of admission : Rs. 1,10,000/- 																																															
4	Expected Number of students for 1st & 2nd Intakes: 20 students																																															
5	Expected Earning from first two Intakes (B5): (Show working) $1,10,000 \times 20 \text{ (1}^{\text{st}} \text{ intake)} + 1,10,000 \times 20 \text{ (2}^{\text{nd}} \text{ intake)} = 2.2 \text{ Million} + 2.2 \text{ Million} = 4.4 \text{ Million}$																																															
6	Expected Earnings for the Next Four Years (B6): (show working) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Semester</th><th>Students</th><th>Cumulative Students</th><th>Earnings</th></tr> </thead> <tbody> <tr> <td>Fall 2022</td><td>20</td><td>20</td><td>2,200,000/-</td></tr> <tr> <td>Spring 2023</td><td>20</td><td>40</td><td>3,600,000/-</td></tr> <tr> <td>Fall 2023</td><td>25</td><td>65</td><td>5,550,000/-</td></tr> <tr> <td>Spring 2024</td><td>25</td><td>90</td><td>7,300,000/-</td></tr> <tr> <td>Fall 2024</td><td>30</td><td>120</td><td>9,600,000/-</td></tr> <tr> <td>Spring 2025</td><td>30</td><td>150</td><td>11,700,000/-</td></tr> <tr> <td>Fall 2025</td><td>35</td><td>185</td><td>14,350,000/-</td></tr> <tr> <td>Spring 2026</td><td>35</td><td>220</td><td>16,800,000/-</td></tr> <tr> <td colspan="3" style="text-align: right;">Total Projected Earning</td><td>71,100,000/-</td></tr> <tr> <td colspan="3" style="text-align: right;"></td><td>71.1 million</td></tr> </tbody> </table> <ul style="list-style-type: none"> • Tuition fee per Semester :Rs. 70,000/- • Admission fees & other charges at the time of admission: Rs. 40,000/- • Total fees at the time of admission : Rs. 1,10,000/- 				Semester	Students	Cumulative Students	Earnings	Fall 2022	20	20	2,200,000/-	Spring 2023	20	40	3,600,000/-	Fall 2023	25	65	5,550,000/-	Spring 2024	25	90	7,300,000/-	Fall 2024	30	120	9,600,000/-	Spring 2025	30	150	11,700,000/-	Fall 2025	35	185	14,350,000/-	Spring 2026	35	220	16,800,000/-	Total Projected Earning			71,100,000/-				71.1 million
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7	Total Estimated Salaries of all Additional Human Resources per annum (B7): (Show working) Salary estimated of VFM for 1st year=NIL Salary estimated of VFM for all coming years=1.17 million <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Semester</th><th>No. of VFM</th><th>Total Hours</th><th>Per Semester Expenses (Rs. 2000 per hour)</th></tr> </thead> <tbody> <tr> <td>Fall 2022</td><td>0</td><td>-</td><td>-</td></tr> <tr> <td>Spring 2023</td><td>0</td><td>-</td><td>-</td></tr> <tr> <td>Fall 2023</td><td>1</td><td>$1 \times 45 = 45$</td><td>90,000/-</td></tr> <tr> <td>Spring 2024</td><td>1</td><td>$1 \times 45 = 45$</td><td>90,000/-</td></tr> <tr> <td>Fall 2024</td><td>2</td><td>$2 \times 45 = 90$</td><td>180,000/-</td></tr> <tr> <td>Spring 2025</td><td>2</td><td>$2 \times 45 = 90$</td><td>180,000/-</td></tr> <tr> <td>Fall 2025</td><td>3</td><td>$3 \times 45 = 135$</td><td>270,000/-</td></tr> <tr> <td>Spring 2026</td><td>4</td><td>$4 \times 45 = 180$</td><td>360,000/-</td></tr> <tr> <td colspan="3" style="text-align: right;">Total Payment</td><td>1,170,000/-</td></tr> </tbody> </table>				Semester	No. of VFM	Total Hours	Per Semester Expenses (Rs. 2000 per hour)	Fall 2022	0	-	-	Spring 2023	0	-	-	Fall 2023	1	$1 \times 45 = 45$	90,000/-	Spring 2024	1	$1 \times 45 = 45$	90,000/-	Fall 2024	2	$2 \times 45 = 90$	180,000/-	Spring 2025	2	$2 \times 45 = 90$	180,000/-	Fall 2025	3	$3 \times 45 = 135$	270,000/-	Spring 2026	4	$4 \times 45 = 180$	360,000/-	Total Payment			1,170,000/-				
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Spring 2026	4	$4 \times 45 = 180$	360,000/-																																													
Total Payment			1,170,000/-																																													
8	Cost of Additional Laboratory Equipment/Tools (B8): (show working) Nil																																															
9	Cost of Additional Classrooms (B9): (Include furniture, technical aids etc.) Nil																																															

10	Cost of Additional Books, Subscription & Memberships to on-line Sites/Repositories (B10): <i>(show details)</i> 0.3 million/annum
11	Off-Site rental Expenses and Cost of other Fixtures (B11): <i>(Show details)</i> Nil
12	Miscellaneous Expenses required for Starting the Program (B12): <ul style="list-style-type: none"> - Advertisement: Rs 50,000/= - Printing & Stationery: Rs 10,000/= - Admin Cost: Rs 100,000/= - Any other: Rs 100,000/= Total: 1.2 million
13	Annual Recurring Expenditures in Subsequent Years (B13): <ul style="list-style-type: none"> - Salaries: Rs 1,170,000/- - Advertisement: Rs 50,000/= - Printing & Stationery: Rs 1,00,000/= - Admin Cost: Rs 100,000/= - Any other: Rs 100,000/= Total: Rs. 1,520,000 = 1.52 million
14	Total Cost of the Programme (B14): B(12) = 1.2 million
15	Net Cost of the Programme (B15): [Subtract B(1) from B(14)] 1.2 million
16	Net Earnings in First Year (B16: [Subtract B(15) from B(5)] B(5) – B(15) = 4.4 Million -1.2 million = 3.2 Million
17	Projected Annual Gross Earning in Subsequent Years (B 17): <i>(show details & working; add 10% towards all expenses in subsequent years.)</i> The amount would depend upon number of students
18	Projected Annual Net Earning in Subsequent Years: <i>[Subtract B(13) from B(17)]</i> variations as per the strength of students

ROAD MAP LAUNCH OF NEW PROGRAM - BACHELOR OF SCIENCE IN MATHEMATICS AT BUKC

1st Semester			
S. No.	Course Codes	Course Title	Credit Hours
1	MAT 101	Calculus - I	3
2	ECO 101	Economics	3
3	PHY 101	Physics - I	2+1
4	ENG 105	Functional English	3
5	BES 204	Introduction to Computer Applications	2+1
6	PAK 102	Pakistan Studies	3
Total:			18
2nd Semester			
S. No.	Course Codes	Course Title	Credit Hours
1	MAT 102	Calculus - II	3
2	ECO 102	Econometrics	3
3	PHY 102	Physics - II	2+1
4	ENG 120	English writing skills(English II)	3
5	MIT 102	Programming Languages for Mathematicians	2+1
6	ISL 102	Islamic Studies	3
Total:			18
3rd Semester			
S. No.	Course Codes	Course Title	Credit Hours
1	MAT 201	Calculus - III	3
2	MAT 202	Number Theory	3
3	MAT 203	Quantitative Data Analysis	2+1
4	ENG 201	Oral communication & Presentation skills (English-III)	3
5	MIT 103	Computing Tools for Mathematicians	2+1
Total:			15

4th Semester			
S. No.	Course Codes	Course Title	Credit Hours
1	GSC 121	Linear Algebra	3
2	MAT 206	Vectors and Tensor Analysis	3
3	MAT 207	Qualitative Data Analysis	2+1
4	MAT 208	Real Analysis	3
5	MAT 209	Probability and Distributions	3
		Total:	15

5th Semester			
S. No.	Course Codes	Course Title	Credit Hours
1	MAT 301	Ordinary Differential equations	3
2	MAT 302	Discrete Mathematics	3
3	MAT 303	Abstract Algebra	3
4	MAT 304	Inferential Statistics	3
5	MAT 305	Numerical Analysis - I	3
		Total:	15

6th Semester			
S. No.	Course Codes	Course Title	Credit Hours
1	MAT 306	Numerical Analysis - II	3
2	MAT 307	Partial Differential equations	3
3	MAT 308	Complex Analysis	3
4	MAT 309	Classical Mechanics	3
5	MAT 310	Experimental Design	2+1
		Total:	15

7th Semester			
S. No.	Course Codes	Course Title	Credit Hours
1	MAT 401	Differential Geometry	3
2	MAT 402	Operational Research	3
3	MAT 403	Functional Analysis	3
4		Elective - I	3
5		Elective - II	3
		Total:	15

8th Semester			
S. No.	Course Codes	Course Title	Credit Hours
1	MAT 404	Fluid Dynamics	3
2	MAT 405	Optimization theory	3
3	MAT 406	Mathematical Simulations	3
4		Elective - III	3
5		Elective - IV	3
			15

Note: BS (Mathematics) is a **126** Credit Hours Program spread over eight semesters.

<u>LIST OF ELECTIVE COURSES</u>			
<u>APPLIED MATHEMATICS</u>		<u>PURE MATHEMATICS</u>	
MAT 407	Electromagnetism I	MAT 419	Projective geometry
MAT 408	Electromagnetism II	MAT 420	Topology
MAT 409	Graph theory	MAT 421	General Relativity
MAT 410	Finite Element Analysis	MAT 422	Tensor Analysis
MAT 411	Mathematical physics	MAT 423	Rings & Modules
MAT 412	Quantum mechanics	MAT 424	Galois theory
MAT 413	Heat Transfer	MAT 425	Analytical Number Theory
MAT 414	Finite Difference Analysis	MAT 426	Advanced field theory
MAT 415	Astronomy	MAT 427	Group Theory
MAT 416	Fuzzy logic		
MAT 417	Fuzzy Differential Equations		
MAT 418	Stochastic		

Semester	Credit Hours
1	18
2	18
3	15
4	15
5	15
6	15
7	15
8	15
Total Credit Hours	126

COURSE OUTLINES

SEMESTER 1

CALCULUS I

Prerequisite(s): None

Credit Hour s: 3 + 0

Objectives: This is the first course of the basic sequence, Calculus I-III, serving as the foundation of advanced subjects in all areas of mathematics. The sequence, equally, emphasizes basic concepts and skills needed for mathematical manipulation. Calculus I & II focus on the study of functions of a single variable.

Contents: Limits and continuity; derivative of a function and its applications; optimization problems; mean value theorem (Taylor's theorem and the infinite Taylor series with applications) and curve sketching; anti-derivative and integral; definite integral and applications; the fundamental theorem of calculus; inverse functions (Chapters 1-6 of the text)

Recommended Books:

1. Anton H, *Calculus: A New Horizon* (6th edition), 1999, John Wiley, New York
2. Stewart J, *Calculus* (3rd edition), 1995, Brooks/Cole (suggested text)
3. Thomas GB, Finney AR, *Calculus* (10th edition), 2002, Addison-Wesley, Reading, Ma, USA

ECONOMICS

Prerequisite(s): None

Credit Hour s: 3 + 0

Objectives: This course focuses on the mathematical methods and models that are required to understand current economics and to investigate economic models.

Contents: This course focuses on the mathematical methods and models that are required to understand current economics and to investigate economic models. Topics may include limits, sequences and series, combinatorics, set theory; univariate and multivariate calculus; matrix algebra and systems of linear equations; and applications in economic models.

Recommended Books:

1. Foundations of Mathematical & Computational Economics", Kamran Dadkhah, ***2nd edition***.
2. Mathematics for Economists. Simon, Carl P and Lawrence Blume.

INTRODUCTION TO COMPUTER APPLICATIONS

Prerequisite(s): Nil

Credit Hours: 2 + 1

Recommended Books:

1. Shelly, G. B., & Vermaat, M. E. (2012). Discovering computers fundamentals: your interactive guide to the digital world (Latest ed.). Cengage Learning.
2. Sawyer, S. C., & Williams, B. (2000). Introduction to Using Information Technology (Latest ed.). McGraw-Hill Higher Education.

Objectives: This course is designed for students with little or no computer experience. This course introduces computer concepts, hardware components, basic computer operations and use of software applications to solve problems. Students will have complete understanding and use of personal computers and application software such as Microsoft Word, Excel and PowerPoint.

Contents: Data and Information, Information Processing Cycle, Components of a Computer, Advantages and Disadvantages of Using Computers, Categories of Computers, Computer Applications in Society. Keyboard and Pointing Devices, Types of Input, Input for Smart Phones, Game Controllers, Digital Cameras, Voice Input, Video Input, Scanners and Reading Devices, Biometric Input, Terminals. Display Devices, LCD Monitors and LCD Screens, Plasma Monitors, CRT Monitors, Printers, Nonimpact Printers, Impact Printers, Speakers, Headphones, Data Projectors. Interactive Whiteboards, Storage, Hard disks, Flash Memory Storage, Solid State Drives, Memory Cards, USB Flash Drives, Cloud Storage, Optical Discs, Blue-Ray Discs, Magnetic Tapes, Magnetic Stripe Cards and Smart Cards, Microfilm and Microfiche, Enterprise Storage. Motherboard, Processor, Control Unit, Arithmetic Logic Unit, Machine Cycle. Data Representation, Memory Sizes, Types of Memory, RAM, Cache, ROM, Flash Memory. System Software, Operating Systems, Utility Programs. Application Software, Business Software, Graphics and Multimedia Software, Software for Home, Personal, and Educational Use, Web Applications. Application Software for Communications. Internet, World Wide Web, Networks, Intranets. Enterprise Computing, Computer Security Risks, Viruses. Introduction to MS Word, MS Excel, MS PowerPoint.

PHYSICS 1

Prerequisite(s): Nil

Credit Hours: 2+1

Objectives: The main objective of this course is to understand the different motions of objects on a macroscopic scale and to develop simple mathematical formalisms to analyze such motions. This is a calculus-based introductory course with maximum emphasis on applying the acquired knowledge to solving problems

Contents: Basic Concepts: Units and Dimensions, SI Units, Changing Units, Scalars and Vectors, Adding Vectors: Graphical as well as Component Method, Multiplying Vectors: Dot and Cross Products. Motion in One, Two and Three Dimensions: Position & Displacement, Velocity and Acceleration, Motion under Constant Acceleration, Projectile Motion, Uniform Circular Motion, Relative Velocity and Acceleration in One and Two Dimensions, Inertial and Non-Inertial Reference Frames. Newton's Laws: Newton's Laws of Motion and their Applications involving some particular forces including Weight, Normal Force, Tension, Friction, and Centripetal Force, Newton's Law of Gravitation, Gravitational Potential Energy, Escape Velocity, Kepler's Laws, Satellite Orbits & Energy. Work and Kinetic Energy: Work done by Constant and Variable Forces: Gravitational and Spring Forces, Power, Conservative and Non-conservative Forces, Work and Potential Energy, Isolated Systems and Conservation of Mechanical Energy, Work Done by External Forces including Friction and Conservation of Energy. System of Particles: Motion of a System of Particles and Extended Rigid Bodies, Center of Mass and Newton's Laws for a System of Particles, Linear Momentum, Impulse, Momentum & Kinetic Energy in One and Two Dimensional Elastic and Inelastic Collisions. Rotational Motion: Rotation about a Fixed Axis, Angular Position, Angular Displacement, Angular Velocity and Angular Acceleration, Rotation under Constant Angular Acceleration, relationship between Linear and Angular Variables, Rotational Inertia, Parallel-axis Theorem, Torque and Newton's Law for Rotation, Work and Rotational Kinetic Energy, Power, Rolling Motion, Angular Momentum for a single Particle and a System of Particles, Conservation of Angular Momentum, Precession of a Gyroscope,

Static Equilibrium involving Forces and Torques, Determination of moment of inertia of various shapes i.e. for disc, bar and solid sphere. Angular Momentum: Angular Velocity, Conservation of angular momentum, effects of Torque and its relation with angular momentum. Simple Harmonic Motion (SHM): Amplitude, Phase, Angular Frequency, Velocity and Acceleration in SHM, Linear and Angular Simple Harmonic Oscillators, Energy in SHM, Simple Pendulum, Physical Pendulum, SHM and Uniform Circular Motion, Damped Harmonic Oscillator. Special Theory of Relativity: Inertial and non-inertial frame, Postulates of Relativity.

Recommended Books:

1. D. Halliday, R. Resnick and J. Walker, "Fundamentals of Physics", John Wiley & Sons, 9th ed. 2010.
2. R. A. Serway and J. W. Jewett, "Physics for Scientists and Engineers", Golden Sunburst Series, 8th ed. 2010.
3. R. A. Freedman, H. D. Young, and A. L. Ford (Sears and Zeemansky), "University Physics with Modern Physics", Addison-Wesley-Longman, 13th International ed. 2010.
4. F. J Keller, W. E. Gettys and M. J. Skove, "Physics: Classical and Modern, McGraw Hill. 2nd ed. 1992.

SEMESTER 2

CALCULUS II

Prerequisite(s): Calculus I

Credit Hours: 3 + 0

Objectives: This is the second course of the basic sequence Calculus I-III serving as the foundation of advanced subjects in all areas of mathematics. The sequence, equally, emphasizes basic concepts and skills needed for mathematical manipulation. As continuation of Calculus I, it focuses on the study of functions of a single variable.

Contents: Continuation of Calculus I: Techniques of integration; further applications of integration; parametric equations and polar coordinates; sequences and series; power series representation of functions (Chapters 7-10 of the text)

Recommended Books:

1. Anton H, *Calculus: A New Horizon* (6th edition), 1999, John Wiley, New York
2. Stewart J, *Calculus* (3rd edition), 1995, Brooks/Cole (suggested text)
3. Thomas GB, Finney AR, *Calculus* (10th edition), 2002, Addison-Wesley, Reading, Ma, USA

ECONOMETRICS

Prerequisite(s): Economics

Credit Hours: 3 + 0

Objective: Econometrics is a set of research tools used to estimate and test economic relationships. The methods taught in this introductory course can also be employed in the business disciplines of accounting, finance, marketing and management and in many social science disciplines. The aim of this course is to provide you with the skills helpful in filling the gap between being "a student of economics" and being "a practicing economist." By taking this introduction to econometrics you will gain an overview of what econometrics is about, and develop some "intuition" about how things work. The emphasis of this course will be on understanding the tools of econometrics and applying them in practice.

Contents: Brief introduction to econometrics, econometric model , Sources of data, Review of Statistical Concepts, Random Variables , Controlled vs. uncontrolled experimental data , Discrete vs. continuous random variables , Review of probability concepts , Expected value , Sample moments of a random variable , The joint density function , Marginal density, conditional density and independence , Covariance and correlation , The Normal density , Review of Statistics , Hypothesis tests , p-values. The Simple Linear Regression Model , The econometric model , The least squares principle , Estimating the econometric model and interpreting the results , The properties of the least squares estimates of an econometric model , Inference and prediction in the Simple Linear Regression Model , Interval estimation and hypothesis testing , Evaluating the Simple Linear Regression Model, The General Linear Regression Model, The econometric model with more than one independent variable , The least squares principle , Estimating the GLRM and interpreting the results , Inference and prediction in the GLRM , Single and joint hypothesis tests of the parameters of the econometric model , Model specification issues , Collinear variables, Non-linear effects in Regression models, Binary variables , Interactions between binary variables , Functional form 6. Assessing Regression Models, threats to validity of model – internal threats – external threats. Additional Topics in Regression Analysis, Estimating regression models with panel data, Regression Models with Binary Dependent Variable, Instrumental Variable estimation, Time Series Econometrics, Stationary time series, Trends, Spurious regression, Tests for stationarity

PHYSICS II

Pre-requisite: Physics 1

Credit Hours: 2+1

Objectives: The main objective of this course is to understand the Physics of Electromagnetism and to develop simple mathematical formalisms to analyze the electromagnetic fields and interactions. This is a calculus-based introductory course with maximum emphasis on applying the acquired knowledge to solving problems.

Contents: Electrostatics: Electric Charge, Conductors and Insulators, Coulomb's Law, Electric Fields due to a Point Charge and an Electric Dipole, Electric Field due to a Charge Distribution, Electric Dipole in an Electric Field, Electric Flux, Gauss' Law and its Applications in Planar, Spherical and Cylindrical Symmetry. Electric Potential: Equipotential Surfaces, Potential due to a Point Charge and a Group of Point Charges, Potential due to an Electric Dipole, Potential due to a Charge Distribution, Relation between Electric Field and , Electric Potential Energy. Capacitors and Capacitance: Parallel Plate, Cylindrical and Spherical capacitors, Capacitors in Series and Parallel, Energy Stored in an Electric Field, Dielectrics and Gauss' Law, DC Circuits: Electric Current and Current Density, Resistance and Resistivity, Ohm's Law, Power in Electric Circuits, Semiconductors and Superconductors, Work, Energy, and EMF, Resistances in Series and Parallel, Single and Multi-loop Circuits, Kirchhoff's Rules, RC Circuits, Charging and Discharging of a Capacitor. Magnetic Field and Magnetic Force: Crossed Electric and Magnetic Fields and their Applications, Hall Effect, Magnetic Force on a Current Carrying Wire, Torque on a Current Loop, Magnetic Dipole Moment, Magnetic Field Due to a Current, Force between two Parallel Currents, Ampere's Law, Biot- Savart Law: Magnetic Field due to a Current, Long Straight Wire carrying Current, Solenoids and Toroids, A current-carrying Coil as a Magnetic Dipole, Inductance, Faraday's Law of Induction, Lenz's Law, Induction and Energy Transfers, Induced Electric Fields, Inductors and Inductances, Self-Inductance, RL Circuits, Energy Stored in a Magnetic Field, Energy Density, Mutual Induction.

Recommended Books:

1. D. Halliday, R. Resnick and J. Walker, "Fundamentals of Physics", John Wiley & Sons, 9th ed. 2010.

2. R. A. Serway and J. W. Jewett, "Physics for Scientists and Engineers", Golden Sunburst Series, 8th ed. 2010.
3. R. A. Freedman, H. D. Young, and A. L. Ford (Sears and Zeemansky), "University Physics with Modern Physics", Addison-Wesley-Longman, 13th International ed. 2010.

PROGRAMMING LANGUAGES FOR MATHEMATICIANS

Prerequisite(s): Introduction to Computers Applications

Credit Hours: 2 + 1

Objectives: The purpose of this course is to introduce students to operating systems and environments

Contents: Introduction to operating systems, C language, building blocks, variables, input/output, loops (FOR, WHILE, DO), decisions (IF, IF ELSE, ELSE IF) construct switch statement, conditional statement, function hat returns a value using argument to pass data to another function, external variable, arrays and strings, pointers, structure, files and introduction to C++

Recommended Books:

1. Aho, AV, Ulman JD, Foundation of Computer Science, 1995, Computer Science Press, WH Freeman, New York
2. Hein JL, *Theory of Computation: An Introduction* (1st edition), Jones & Bartlett, Boston

SEMESTER 3

CALCULUS III

Prerequisite(s): Calculus II

Credit Hours: 3 + 0

Objectives: This is the third course of the basic sequence Calculus I-III serving as the foundation of advanced subjects in all areas of mathematics.

Contents: This course covers vectors and analytic geometry of 2 and 3 dimensional spaces; vector-valued functions and space curves; functions of several variables; limits and continuity; partial derivatives; the chain rule; double and triple integrals with applications; line integrals; the Green theorem; surface area and surface integrals; the Green, the divergence and the Stokes theorems with applications (Chapters 11-14 of the text)

Recommended Books:

1. Anton H, *Calculus: A New Horizon* (6th edition), 1999, John Wiley, New York
2. Stewart J, *Calculus* (3rd edition), 1995, Brooks/Cole
3. Thomas GB, Finney AR, *Calculus* (10th edition), 2002, Addison-Wesley, Reading, Ma, USA.

COMPUTING TOOLS FOR MATHEMATICIANS

Prerequisite(s): Programming Languages for Mathematicians

Credit Hours: 2 + 1

Objectives: The purpose of this course is to teach students the use of mathematical software like MATLAB, MAPLE, and MATHEMATICA for solving computationally difficult problems in mathematics. The student will become well versed in using mathematical software and will learn a number of techniques that are useful in calculus as well as in other areas of mathematics.

Contents: The contents of the course are not fixed, however the following points should be kept in mind while teaching the course. The course should be taught in a computer lab setting. Besides learning to use the software, the students must be able to utilize the software to solve computationally difficult problems in calculus and other areas of mathematics. At the end of the course, the students should have a good command on at least two of the three programs mentioned above.

Recommended Books:

1. Etter DM, Kuncicky D, Hull D, *Introduction to MATLAB 6*, 2001, Prentice Hall, Englewood Cliffs, NJ, USA.
2. Garvan F, *The Maple Book*, 2002, Chapman & Hall/CRC
3. Kaufmann S, *Mathematica As a Tool: An Introduction with Practical Examples*, 1994, Springer, New York

NUMBER THEORY

Prerequisite(s): NIL

Credit Hours: 3 + 0

Objectives of the Course:

This course shall assume no experience or background in number theory or theoretical mathematics. The course introduces various strategies for composing mathematical proofs.

Course Outline: Natural numbers, integers, rational numbers, real numbers, complex numbers, the equivalence and the difference of cardinality between them, de Morbie's theorem with applications, Divisibility, euclidean algorithm, GCD and LCM of 2 integers, properties of prime numbers, fundamental theorem of arithmetic (UFT), congruence relation, residue system, Euler's phi-function, solution of system of linear congruences, congruences of higher degree, Chinese remainder theorem, Fermat's little theorem, Wilson's theorem and applications, primitive roots and indices; integers belonging to a given exponent ($\text{mod } p$), primitive roots of prime and composite moduli, indices, solutions of congruences using indices., quadratic residues, composite moduli, quadratic residues of primes, the Legendre symbol, the Quadratic reciprocity law, the Jacobi symbol, Diophantine equations

Recommended Text: Rosen KH, *Elementary Number theory and its Applications* (4th edition), 2000, Addison-Wesley, Reading, Ma, USA

QUANTITATIVE DATA ANALYSIS

Prerequisite(s): Econometrics

Credit Hours: 2+1

Objectives:

This course provides students with practical experience of the management and analysis of quantitative data. Using examples of research in education and other fields the course explores the nature of quantitative data, the relationship between quantitative analysis and theory building, and some of the major topic areas of statistical analysis.

Contents: This course will provide students with an introduction to the main statistical concepts and techniques of analysis of quantitative data used in education and more widely in social sciences. It is addressed to students who have little or no experience of using quantitative data and it aims to enable students to develop an understanding of basic and intermediate quantitative methods and the ability to use these methods like Measurement and descriptive statistics, central tendency and dispersion, normal curve and Z scores, sampling/probability and inferential statistics, estimation and hypothesis testing. Moreover, the course will support students in learning the statistical programme SPSS.

Recommended Books:

1. Analyzing quantitative data: From description to explanation by Blaikie, Norman. Sage, 2003.
2. Healey, J.P. *Statistics: A Tool for Social Research*. 8th Edition. Belmont, CA: Wadsworth. 2009.

SEMESTER 4

LINEAR ALGEBRA

Prerequisite(s): None

Credit Hours: 3 + 0

Objectives: This is the first course in groups, matrices and linear algebra, which provides basic background needed for all mathematics majors, a prerequisite for many courses. Many concepts presented in the course are based on the familiar setting of plane and real three-space, and are developed with an awareness of how linear algebra is applied.

Contents: *Group Theory*: basic axioms of a group with examples, subgroups, order of a group, subgroups generated by subset of a group, system of generators, cyclic groups, cosets, Lagrange's theorem, introduction to permutations, even and odd permutations, cycles, lengths of cycles, transpositions, symmetric group, alternating groups, rings, fields (definitions and examples), vector spaces, subspaces, linear dependence and independence, linear span of a subset of a vector space, bases and dimensions of a vector space. *Linear Algebra*: Algebra of matrices, determinants, matrix of a linear transformation, row and column operations, rank, inverse of matrices, solution of homogeneous and non-homogeneous equations, orthogonal transformation, eigenvalue problem with physical significance, Vector spaces; sums and direct sums of subspaces of a finite dimensional vector space, Dimension theorem, linear transformation, null space, image space of linear transformation, rank and nullity of a linear transformation, relation between rank, nullity and dimension of the domain of a linear transformation, matrix of linear transformation, change of basis, inner product spaces, projection of a vector along another vector, norm of a vector, Cauchy Schwartz inequality, Orthogonal and orthonormal basis, similar matrices and diagonalization of a matrix, Home (V,W), dimension and basis of Home (V,W), dual space and dual basis, annihilators.

Recommended Books:

1. Anton H, *Linear Algebra with Applications* (8th edition), John Wiley, New York
2. Herstein IN, *Topics in Algebra* (2nd edition), 1975, John Wiley, New York
3. Hill RO, *Elementary Linear Algebra with Application* (3rd edition), 1995, Brooks/Cole
4. Leon SJ, *Linear Algebra with Applications* (6th edition), 2002, Prentice Hall, Englewood Cliffs, NJ, USA
5. Nicholson WK, *Elementary Linear Algebra with Applications* (2nd edition), 1994, PWS Publishing Co.

VECTORS AND TENSOR ANALYSIS**Prerequisite(s):** Calculus III**Credit Hours: 3 + 0**

Objectives: This course shall assume background in calculus. It covers basic principles of vector analysis, which are used in mechanics

- **Contents:** 3-D vectors, summation convention, kronecker delta, Levi-Civita symbol, vectors as quantities transforming under rotations with ϵ_{ijk} notation, scalar- and vector-triple products, scalar- and vector-point functions, differentiation and integration of vectors, line integrals, path independence, surface integrals, volume integrals, gradient, divergence and curl with physical significance and applications, vector identities, Green's theorem in a plane, divergence theorem, Stokes' theorem, coordinate systems and their bases: the spherical, cylindrical and curvilinear coordinate meshes, alternating symbol, relation between alternating symbol and kronecker delta, tensors of first, second and higher orders, algebra of tensors, contraction of tensor, quotient theorem, symmetric and skew-symmetric tensors, Covariant and Contra variant tensors, invariance property, isotropic tensors, differentiation of tensors, application of tensors in modeling anisotropic systems, study of physical tensors (moment of inertia, index of refraction, etc.), diagonalization of inertia tensor as aligning coordinate frame with natural symmetries of the system

Recommended Books:

1. Bourne DE, Kendall PC, *Vector Analysis and Cartesian Tensors* (2nd edition), Thomas Nelson UK – 1977
2. Shah NA, *Vector and Tensor Analysis*, 2005, A-One Publishers, Lahore
3. Smith GD, *Vector Analysis*, Oxford University Press, Oxford
4. Spiegel MR, *Vector Analysis*, 1974, McGraw Hill, New York

REAL ANALYSIS

Prerequisite(s): Calculus III

Credit Hours: 3 + 0

Objectives: This is the first rigorous course in analysis and has a theoretical emphasis. It rigorously develops the fundamental ideas of calculus and is aimed to develop the students' ability to deal with abstract mathematics and mathematical proofs.

Contents: Supremum and infimum, completeness properties of the real numbers, limits of numerical sequences; limits and continuity, properties of continuous functions on closed bounded intervals; derivatives in one variable; the mean value theorem; Sequences of functions, power series, pointwise and uniform convergence. Functions of several variables: open and closed sets and convergence of sequences in R^n ; limits and continuity in several variables, properties of continuous functions on compact sets; differentiation in n -space; the Taylor series in R^n with applications; the inverse and implicit function theorems. Series of numbers and their convergence. Series of functions and their convergence. Daboux upper and lower sums and integrals; Daboux integrability. Riemann sums and the Riemann integral. Riemann integration in R^2 , change of order of variables of integration. Riemann integration in R^3 , and R^n . Riemann-Steiltjes integration. Functions of bounded variation. The length of a curve in R^n . Lebesque integration.

Recommended Books:

1. Brabenec RL, *Introduction to Real Analysis*, 1997, PWS Publishing Company
2. Gaughan ED, *Introduction to Analysis* (5th edition), 1997, Brooks/Cole
3. Bartle RG, Sherbert DR, *Introduction to Real Analysis* (3rd edition), 1999, John Wiley, New York

PROBABILITY AND DISTRIBUTIONS

Prerequisite(s): Quantitative Data Analysis

Credit Hours: 3 + 0

- **Objectives:** A systematic exposure on the issues and problems of applying and interpreting statistical analysis of natural data. The course will focus on probability statistical methods used for making concrete conclusions and statistical discussion. Fundamental Statistical skills to be developed for proper shaping of the data and healthy statistical decision making to get sufficient quantitative evidences.

Contents: Induction: Understanding with Natural of Date Types , Organization of Quantitative and Qualitative Data , Rules of Data Mining and Editing , Frequency Distribution and Analysis, Construction of Contingency Table, Probability Theory: ,Introduction to Basic Probability Theory ,Tree Diagram ,Classical Approach of Probability ,Marginal, Joint, and Conditional Probability ,Rules and significant properties of Probability Random Variable: Concept of Discrete and Continuous Variables ,Construction of Probability Distribution of Discrete and Continuous Variable , Mathematical Expectation and Utility ,Construction of Probability Distribution from Quantitative & Qualitative Data ,Analysis of Probability Histogram, Concepts of Mathematical Expectation ,Properties of Mathematical Expectation for Mean, Variance, Standard Deviation ,Mathematical Expectation of Mean, Variance, & Standard Deviation ,Expected Loss and Profit Discrete Probability Distribution ,Binomial Distribution ,Bernoulli Distribution ,Properties of Binomial and Bernoulli Distribution ,Analysis by Statistical Software, Discrete Probability Distribution ,Poisson Distribution ,Properties of Poisson Distribution ,Analysis by Statistical Software 10th Discrete Probability Distribution ,Hypergeometric Distribution. , Properties of Hypergeometric Distribution, Analysis by

Statistical Software, Discrete Probability Distribution, Geometric Distribution. , Properties of Geometric Probability Distribution, Analysis by Statistical Software, Continuous Probability Distribution, Normal Distribution. , Properties of Normal Distribution, Analysis by Statistical Software 13th Continuous Probability Distribution, Gamma and Exponential Distribution. , Properties Gamma and Exponential Distribution, Analysis by Statistical Software, Continuous Probability Distribution, Weibull Distribution. , Properties Weibull Distribution, Analysis by Statistical Software, Decision Theory

Recommended Books:

Probability & Statistics for Engineers & Scientists (2012), 9th Edition by Ronald E. Walpole. Raymond H. Myers, Sharon L. Myers, & Keying Ye, Prentice Hall.

QUALITATIVE DATA ANALYSIS

Prerequisite(s): Quantitative Data Analysis

Credit Hours: 3 + 0

Objectives:

This course will introduce students to the theory and practice of analyzing qualitative data in research. The course is oriented around exploratory and interpretative analytic approaches to interview and focus group data.

Contents: This course surveys theory and methods for the analysis of categorical response and count data. Topics covered include the exact and approximate inference for contingency tables, logistic and Poisson regression, ordinal and multinomial logic models, Computer software to analyze qualitative data

Recommended Book:

Agresti, A. (2002) Categorical Data Analysis, 2nd edition, New York: Wiley.

SEMESTER 5

DISCRETE MATHEMATICS

Prerequisite(s): Number theory

Credit Hours: 3 + 0

Objectives: The main objective is to introduce the concept of discrete structures of mathematics to students. In addition, to understand mathematical reasoning, logically and mathematically. To improve problem-solving skills of enumerating objects using combinatorial analysis.

Set and Relations: Basic notions, set operations, Venn diagrams, extended-set operations, indexed family of sets, countable and uncountable sets, relations, cardinality, equivalence relations, congruence, partitions, partial order, representation of relations, mathematical induction.
Elementary Logic: Logics of order zero and one, Propositions and connectives, truth tables, conditionals and biconditionals, quantifiers, methods of proof, proofs involving quantifiers. Relations, reflexive, symmetry, transitive, equivalence relations, Graphs, terminologies, graph models, types of graphs, representation, Paths, Euler paths and circuits, Hamilton paths and circuits, Tree, terminologies, types of trees, models, properties, binary search trees

Recommended Book: Rosen KH, *Discrete Mathematics and its Applications* (12th edition), 1999, McGraw Hill, New York

NUMERICAL ANALYSIS I

Prerequisite(s): Computing Tools for Mathematicians

Credit Hours: 3 + 0

Contents: Computer arithmetic, approximations and errors; methods for the solution of nonlinear equations and their convergence: bisection method, regula falsi method, fixed point iteration method, Newton-Raphson method, secant method; error analysis for iterative methods. Interpolation and polynomial approximation: Lagrange interpolation, Newton's divided difference, forward-difference and backward-difference formulae, Hermite interpolation. Numerical integration and error estimates: rectangular rule, trapezoidal rule, Simpson's one-three and three-eight rules. Numerical solution of systems of algebraic linear equations: Gauss-elimination method, Gauss-Jordan method; matrix inversion; LU-factorization; Doolittle's, Crout's, Cholesky's methods; Gauss-Seidel and Jacobi methods; matrix norms; method of least squares; eigenvalues and eigenvectors: inclusion methods, power method.

Recommended Books:

1. Atkinson KE, *An Introduction to Numerical Analysis* (2nd edition), 1989, John Wiley, New York (suggested text).
2. Burden RL, Faires JD, *Numerical Analysis* (8th edition), 2005, PWS Publishing Company.

Chapra SC, Canale RP, *Numerical Methods for Engineers*, (5th edition) 2006, McGraw Hill, New York.

ORDINARY DIFFERENTIAL EQUATIONS

Prerequisite(s): Calculus III

Credit Hours: 3 + 0

Objectives: This course provides the foundation of all advanced subjects in Mathematics. Strong foundation and applications of Ordinary Differential Equations is the goal of the course.

Contents: Introduction; formation, solution and applications of first-order-differential equations; formation and solution of higher-order-linear-differential equations; differential equations with variable coefficients; Sturm-Liouville (S-L) system and boundary-value problems; series solution and its limitations; the Frobenius method, solution of the Bessel, the hypergeometric, the Legendre and the Hermite equations; properties of the Bessel, the Legendre and the Hermite functions

Recommended Text: Zill DG, Cullen MR, *Differential Equations with Boundary-Value Problems*, (3rd Edition), 1997, PWS Publishing Co.

INFERRENTIAL STATISTICS

Prerequisite(s): Probability and Distributions

Credit Hours: 3 + 0

Objectives: The Statistical Inference is an advance level course of quantitative analysis. This course contents emphasis to learn the characteristics of unknown population parameters and reach to conclude robust statistical evidences and decision making. The structure of this course will help to improve a higher order statistical data analysis skills and obtain required statistical evidence as per defined research aim & objectives.

Content: Population and Sample, Types of Measurement Scale, Characteristics of Primary Data, Descriptive and Inferential Statistics, Categorization of Inferential Statistics, Review Probability Theory and Probability Histogram, Random Variables, Good Point Estimator: Classification of Statistical Inference and basic supporting tools and purpose , Characteristics of Good Point Estimator

– Unbiasness, Sufficient, Efficient, and Consistent. , Mathematical proof of characteristics of good point estimator , Sample Size Determination, Central Limit Theorem, Sampling Distribution , Concepts of Sampling Distribution , t-distribution , Standard Error , Characteristics of Sampling Distribution , Characteristics of Sampling Distribution of Mean , Numerical proof of sampling with replacement, Utility of Finite Population Correction Factor or Finite Population Multiplier for sampling with replacement. Numerical proof of sampling distribution of the differences of means, Finite Population Correction Factor or Finite Population Multiplier , Probability Sampling Procedures - Simple Random Sampling Procedure - Systematic Random Sampling Procedure - Stratified Random Sampling Procedure - Cluster Random Sampling Procedure , Non-Probability Sample, Properties of Poisson Distribution - Purposive Sampling - Quota Sampling - Multi-Stage Sampling - Sequential Sampling - Convenience Sampling - Snowball Sampling - Judgment Sampling - Replicated Sampling - Multi-Phase Sampling etc., Interval Estimate , Fundamental Terminology for Interval Estimate - Structure of Normal Curve for Interval Estimate. - The main difference Z-Statistic and t-Statistic - Structure of Normal Curve for Interval Estimate. - The main difference Z-Statistic and t-Statistic - Z-statistics and z-score , Interval estimate or Confidence Interval for single population mean (μ) (Large Sample Case) and use of Z-statistic, Z score and properties of z-score , Interval estimate or Confidence Interval for single population mean (Small Sample Case, t-distribution use). , Concept of degree of freedom (d.f.), Testing of Hypothesis, Testing of Hypothesis of Non-Parametric Test, Induction to Non-Parametric Tests - Sign Test - Run Test - Wilcoxon Test

Recommended Text

1. Statistical Inference (2021), 2nd Edition by George Casella & Roger L. Berger, Amazon.
2. All of Statistics (A Concise Course of Statistical Inference), 2004, Larry Wasserman, Springer.

ABSTRACT ALGEBRA

Prerequisite: Algebra

Content: Finite and finitely generated abelian groups, p-groups and the Sylow theorems; Solvable groups, nilpotent groups; Fields, field extensions; Finite fields; An introduction to Galois theory. **Group Theory:** Normalizers and centralizers of a subset of a group, Centre of a group, Normal subgroup, quotient groups, Conjugacy relation between elements and subgroups, homomorphism and isomorphism between groups, Homomorphism and isomorphism theorems, finite p-groups, internal and external direct products, group action on sets, isotropy subgroups, orbits, 1st, 2nd and 3rd Sylow theorems.

Ring Theory: Types of rings, matrix rings, rings of endomorphisms, polynomial rings, integral domain, characteristic of a ring, ideal, types of ideals, quotient rings, homomorphism of rings, fundamental theorem of homomorphism of rings.

Books Recommended:

1. Nicholson, W.K., Abstract Algebra.
2. Ames, D.B., An Introduction to Abstract algebra, International Text Book Co., Pennsylvania.1969
3. Northcott D.D., A first course of homological algebra, Cambridge University Press, Cambridge, 1973. 1985

SEMESTER 6

NUMERICAL ANALYSIS II

Prerequisite(s): Numerical Analysis I

Credit Hours: 3 + 0

Contents: Ill-Conditioned System and its solution, condition number; Matrix Eigenvalue problem: Various methods for finding eigenvalues and eigenvectors of a general matrix; Numerical Integration: Wedd's Rule, Gaussian quadrature formulae for evaluating integrals and their error estimates; Difference Equations; Approximation of Functions: Least Squares, polynomial interpolation, such as Birkhoff Hermite formulae, rational polynomial interpolation, spline interpolation; Multistep methods for IVPs (including predictor-corrector methods), Systems of higher order ODEs, Shooting, Finite difference and Collocation methods for BVPs, Stiff differentials equations.

Recommended Books:

1. Burden and Faires: Numerical Analysis, 4th Ed., Prindle, Webber & Schmidt (1989).
2. Johnson L., & Dean, R., Numerical Analysis, Addison Wesley, Reading, 1982.
3. Numerical Analysis: Mathematics of Scientific Computing by Kincaid and Cheney, Brooks/Cole Pub. Co., 1990.

PARTIAL-DIFFERENTIAL EQUATIONS

Prerequisite(s): Real Analysis I, Ordinary-Differential Equations

Credit Hours: 3 + 0

Objectives: The course provides a foundation to solve Partial Differential Equations with special emphasis on wave, heat and Laplace equations. Formulation and some theory of these equations are also intended.

Contents: First-order-partial-differential equations; classification of second-order p. d. e; canonical form for second-order equations; wave, heat and the Laplace equation in Cartesian, cylindrical and spherical-polar coördinates; solution of partial differential equation by the methods of: separation of variables; the Fourier, the Laplace and the Hankel transforms, non-homogeneous-partial-differential equations

Recommended Text: Myint UT, *Partial Differential Equations for Scientists and Engineers* (3rd edition), 1987, North Holland

COMPLEX ANALYSIS

Prerequisite(s): Real Analysis

Credit Hours: 3 + 0

Objectives: This is an introductory course in complex analysis, giving the basics of the theory along with applications, with an emphasis on applications of complex analysis and especially conformal mappings. Students should have a background in real analysis, including the ability to write a simple proof in an analysis context.

Contents: The algebra and the geometry of complex numbers, Cauchy-Riemann equations, harmonic functions, elementary functions, branches of the logarithm, complex exponents. Contours and contour integrals, the Cauchy-Goursat Theorem, Cauchy integral formulas, the Morera Theorem, maximum modulus principle, the Liouville theorem, fundamental theorem of algebra. Convergence

of sequences and series, the Taylor series, the Laurent series, uniqueness of representation, zeros of analytic functions. Residues and poles and the residue theorem, evaluation of improper integrals involving trigonometric functions, integrals around a branch point. Linear functions, the inversion function, transformations as mappings, preservation of angles, analytical continuation, the argument principle, the Roche theorem

Recommended Books:

Churchill RV, Brown JW: *Complex Variables and Applications* (5th edition), 1989, McGraw Hill, New York

CLASSICAL MECHANICS

Prerequisite(s): Vector and tensor analysis

Credit Hours: 3 + 0

Objectives: This course builds grounding in principles of classical mechanics, which are to be used while studying quantum mechanics, statistical mechanics, electromagnetism, fluid dynamics, space-flight dynamics, astrodynamics and continuum mechanics.

Contents: Particle kinematics, radial and transverse components of velocity and acceleration, circular motion, motion with a uniform acceleration, the Newton laws of motion (the inertial law, the force law and the reaction law), Newtonian mechanics, the Newtonian model of gravitation, simple-harmonic motion, damped oscillations, conservative and dissipative systems, driven oscillations, nonlinear oscillations, calculus of variations, Hamilton's principle, lagrangian and hamiltonian dynamics, symmetry and conservation laws, Noether's theorem, central-force motion, two-body problem, orbit theory, Kepler's laws of motion (the law of ellipses, the law of equal areas, the harmonic law), satellite motion, geostationary and polar satellites, kinematics of two-particle collisions, special theory of relativity, motion in non-inertial reference frame, rigid-body dynamics (3-D-rigid bodies and mechanical equivalence, center of mass and gravity, motion of a rigid body, inverted pendulum and stability, gyroscope), coupled oscillations, vibrating strings, wave equation in one dimension.

Recommended Books:

1. Bedford A, Fowler W, *Dynamics: Engineering Mechanics*, 2006, National Book Foundation, Pakistan.
2. Chow TL, *Classical Mechanics*, 1995, John Wiley, New York
3. Goldstein H, *Classical Mechanics* (2nd edition), 1980, Addison-Wesley, Reading, Ma, USA
4. Marion JB, *Classical Dynamics of Particles and Fields* (2nd edition), 1970, Academic Press, New York
5. Synge JL, Griffith BA, *Principles of Mechanics*, McGraw Hill, New York – 1970

EXPERIMENTAL DESIGN

Prerequisite(s): Qualitative Data Analysis

Credit Hour s: 3 + 0

Objectives: This is a basic course in designing experiments and analyzing the resulting data. The course objective is to learn how to plan, design and conduct experiments efficiently and effectively, and analyze the resulting data to obtain objective conclusions.

Contents: This course focuses on Understanding basic design principles working in simple comparative experimental contexts, Working with single factors or one-way ANOVA in completely randomized experimental design contexts, Implementing randomized blocks, Latin square designs and extensions of these, Working with two level 2k designs, Implementing confounding and blocking

in $2k$ designs, Simple linear regression models, Implementing response surface methodologies and robust parameter designs, Working with random and mixed effects models, Understanding and implementing nested and split-plot and strip-plot designs using repeated measures designs, unbalanced AOV and ANCOVA.

Recommended Books:

1. Montgomery, D. C. (2019). *Design and Analysis of Experiments*, 10th Edition, John Wiley & Sons.

SEMESTER 7
DIFFERENTIAL GEOMETRY

Prerequisite(s): Complex Analysis

Credit Hours: 3 + 0

Contents: Curves with Torsion: Tangent, principal normal, curvature, binomial, torsion, serret Frenet frame and formulae, center of curvature, spherical curvature, Helices, involutes, evolutes, envelopes, developable surfaces, curvilinear co-ordinates, fundamental magnitudes, Meuniers Theorem; Curves on a surface: First & Second curvatures, Euler's Theorem, Dupin's indicatrix, surface of revolution, conjugate systems, asymptotic lines, isometric lines, null lines.

Books Recommended:

1. Vaisman, I., First Course in Differential Geometry, Marcel Dekker, Inc. (1984).
2. Weatherburn, C.E., Differential Geometry of Three Dimension, Cambridge, 1964.
3. Struik, D.J., Lectures on Classical Differential Geometry. Addison – Wesley Canada (1961)

OPERATIONS RESEARCH

Prerequisite(s): Qualitative data Analysis

Credit Hours: 3 + 0

Contents: Overview of Operations Research; Review of LP modeling and basic concepts, Computer Solution of LP Problems, Analysis of selected LP models; Transportation Models, Assignment Models; Project scheduling by PERT and CPM; Integer Linear Programming; Deterministic and Probabilistic Inventory Models; Decision Analysis and Games; Simulation Modeling; Markovian Decision Process.

Books Recommended:

1. Hamdy A. Taha, Operations Research, An Introduction, McMillan Publishing company, New York, 1987.
2. Gillett, B.E., Introduction to Operations Research, Tata McGraw-Hill Publishing Company Ltd., New Delhi. 2001
3. Hillier G.D. & G.J. Lieberman, Operations Research, CBS Publishers and Distributors, New Delhi. 1967

FUNCTIONAL ANALYSIS**Prerequisite(s):** Complex Analysis**Credit Hours:** 3 + 0

Contents: Metric Spaces: A quick review, completeness and convergence, completion. Normed Spaces: Linear spaces, Normed spaces, Difference between a metric and a normed space, Banach spaces, Bounded and continuous linear operators and functionals, Dual spaces, Finite dimensional spaces, F. Riesz Lemma, The Hahn-Banach Theorem, The HB theorem for complex spaces, The HB theorem for normed spaces, The open mapping theorem, The closed graph theorem, Uniform boundedness principle and its applications, Banach-Fixed-Point Theorem: Applications in Differential and Integral equations, Inner-Product Spaces: Inner-product space, Hilbert space, orthogonal and orthonormal sets, orthogonal complements, Gram-Schmidt orthogonalization process, representation of functionals, Reisz-representation theorem, weak and weak* Convergence.

Recommended Books:

1. Curtain RF, Pritchard AJ, *Functional Analysis in Modern Applied Mathematics*, Academic Press, London, 1977
2. Friedman A, *Foundations of Modern Analysis*, 1982, Dover.
3. Kreyszig E, *Introductory Functional Analysis with Applications*, John Wiley, India, 2007
4. Rudin W, *Functional Analysis*, 1973, McGraw Hill, New York.

SEMESTER 8**FLUID DYNAMICS****Prerequisite(s):** Real Analysis**Credit Hours:** 3 + 0

Objectives: The main objective of this course is to help in understanding the nature of fluid statics, in particular dealing with problems related to hydrostatic forces. The course is designed to learn the basic models for Inviscid and viscous fluid flow using control volume and differential analysis approaches.

Contents: Introduction, Fundamental Concepts, Fluid Statics, Basic Equations in Integral Form for a Control Volume, Introduction to Differential Analysis of Fluid Motion, Incompressible Inviscid Flow, Dimensional Analysis and Similitude. Internal incompressible viscous flow, External incompressible viscous flow, Flow in open channels, Introduction to compressible flows, Steady one-dimensional compressible flow and Introduction to turbulent flow.

Books Recommended:

1. Fox, R.W., McDonald, A.T., *Introduction to Fluid Mechanics*, JustAsk! Edition, John Wiley & Sons 2006.
2. F.M. White *Fluid Mechanics*, 5th Ed. McGraw-Hill 2003.
3. **Nazir Ahmad**, *Mechanics of Fluids*, 4e, McGraw-Hill, 2003.

MATHEMATICAL SIMULATIONS**Prerequisite(s):** Partial-Differential Equations**Credit Hours:** 3 + 0

Objectives: Mathematics is used in many areas such as engineering, ecological systems, biological systems, financial systems, economics, etc. In all such applications one approximates the actual

situation by an idealized model. This is an introductory course of modeling, consisting of three parts: modeling with ordinary differential equations and their systems; partial differential equations; and integral equations. The course will not be concerned with the techniques for solving the equations but with setting up the equations in specific applications. Whereas the first two types of equations have already been dealt with, the third type has not. Consequently, solutions of the former will be discussed but of the latter will rarely be touched upon.

Contents:

Concepts of model, modeling and simulation Functions, linear equations, linear-differential equations, nonlinear-differential equations and integral equations as models, introduction to simulation techniques

Ordinary-Differential Equations: Modeling with first order differential equations: Newton's law of cooling; radioactive decay; motion in a gravitational field; population growth; mixing problem; Newtonian mechanics. Modeling with second order differential equations: vibrations; application to biological systems; modeling with periodic or impulse forcing functions. Modeling with systems of first order differential equations; competitive hunter model; predator prey model.

Partial-Differential Equations: Methodology of mathematical modeling; objective, background, approximation and idealization, model validation, compounding. Modeling wave phenomena (wave equation); shallow water waves, uniform transmission line, traffic flow, RC circuits. Modeling the heat equation and some application to heat conduction problems in rods, lamina, cylinders etc. Modeling the potential equation (Laplace equation), applications in fluid mechanics, gravitational problems. Equation of continuity.

Simulation: Techniques of simulation (students are required to simulate at least one system).

Recommended Books:

1. Giordano FR, Weir MD, *Differential Equations: A Modeling Approach*, 1994, Addison Wesley, Reading, Ma, USA
2. Jerri AJ, *Introduction to Integral Equations with Applications*, 1985, Marcel Dekker, New York
3. Myint UT, Debnath L, *Partial Differential Equations for Scientists and Engineers* (3rd edition), 1987, North Holland, Amsterdam

OPTIMIZATION THEORY

Prerequisite(s): Algebra I, Real Analysis I

Credit Hours: 3 + 0

Objectives: The main objective is to teach the basic notions and results of mathematical programming and optimization. The focus will be to understand the concept of optimality conditions and the construction of solutions. Students should have a good background in analysis, linear algebra and differential equations.

Contents: Linear programming: simplex method, duality theory, dual and primal-dual simplex methods. Unconstrained optimization: optimality conditions, one-dimensional problems, multi-dimensional problems and the method of steepest descent. Constrained optimization with equality constraints: optimality conditions, Lagrange multipliers, Hessians and bordered Hessians. Inequality constraints and the Kuhn-Tucker Theorem. The calculus of variations, the Euler-Lagrange equations, functional depending on several variables, variational problems in parametric form, transportation models and networks

Recommended Books:

1. Elsgolts L, *Differential Equations and the Calculus of Variations*, 1970, Mir Publishers, Moscow.
2. Gotfried BS, Weisman J, *Introduction to Optimization Theory*, 1973, Prentice Hall, Englewood Cliffs, NJ, USA.
3. Luenberger DG, *Introduction to Linear and Non-Linear Programming*, 1973, Addison-Wesley, Reading, Ma, USA

INTRODUCTION OF MANDATORY MEDIA LAB HOURS AT BS IN TELEVISION BROADCASTING AND DIGITAL MEDIA FROM FALL 2021

1. Here are some of the rationales for this proposal:

- a. Keeping in view the ever-changing spectrum of media industry, students at Undergraduate level need more practical exposure than ever.
- b. Practical learning is the fundamental requirement of the industry and in recent times, it has gained momentous significance.
- c. Media Lab hours will help students materialize their talents in media industry, entrepreneurial platforms as well as other ventures in their life.
- d. This initiative will help in optimal utilizing of BU media House and production of quality contents for BUTV, FM & Bahria Tribune.
- e. This proposal is completely in line with the Media Studies Department and Bahria University's Vision of making students market ready during their course of degrees.

Implementation:

2. Following implementation is planned:

- a. The proposed Media Lab hours will be non-credited mandatory requirement for the completion of BS Television Broadcasting and Digital Media degree program.
- b. These learning hours will be in addition to the already existing lab and project based learning.
- c. Students will be required to complete a minimum of 80 hours of practical learning (24 hours in first 4 and 56 hours in last 4 semesters of their degree) at BU Media House (FM, BU TV and Bahria Tribune).
- d. Under this initiative, Students will be offered various specialization streams such as audio and Video editing, camera work, Radio and TV anchoring, production, animation/designing, news writing, script/screen writing, blogging/V-logging etc.
- e. Lab activities will be directly supervised by faculty members and technical staff of Media House.
- f. Lab hours will be part of students' regular weekly timetable.

3. **HR effect (if Any).** 1 Permanent faculty member is proposed to be nominated as Practical Learning coordinator to facilitate students, trainers as well as the faculty members and also to keep complete record of PLL activities.

Revised Roadmap of BS TV Broadcasting & Digital Media (Morning)**8 Semesters / 4 years****Semester One**

S#	Course Code	Course Title	CH
01	ENG 111	Functional English – I	03
02	MTB 101	Computer Skills for Media	03
03	MTB 109	Introduction to Television	03
04	MED 209	Journalistic Language	03
05	PAK 101	Pakistan Studies	02
06		Elective*	03

Semester Two

S#	Course Code	Course Title	CH
01	ENG 113	English – II (Writing & Presentation Skills)	03
02	MED 208	Introduction to Digital Media	03
03	MTB 108	News Writing & Reporting in Broadcast Journalism	03
04	MAT 205	Statistics	03
05	ISL 101	Islamic Studies / (Ethics)	02
06		Elective*	03

Semester Three

S#	Course Code	Course Title	CH
01	MED 403	Media Laws and Ethics	03
02	MTB 202	Theories of Mass Communications – I	03
03	MED 206	Current Affairs	03
04	MED 448	Intercultural Communication	03
05	ENG 114	Communication Skills (English – III)	03
06		Elective*	03

Semester Four

S#	Course Code	Course Title	CH
01	MTB 215	Digital Marketing & Public Relations (PR)	03
02	MTB 212	Theories of Mass Communications – II	03
03	MTB 213	Introduction to Digital Gaming	03
04	MED 455	Media Management and Marketing	03
05	MTB 214	Cyber Psychology	03
06		Elective*	03

Semester Five

S#	Course Code	Course Title	CH
01	MTB 301	TV Script Writing	03
02	MTB 313	Graphic Designing & Visual Communication	03
03	MTB 317	Videography	03
04	MTB 304	Television Lighting System	03
05	MTB 305	Data Journalism	03
06		Elective*	03

Semester Six

S#	Course Code	Course Title	CH
01	MTB 314	TV Program Production	03
02	MTB 315	Television, Digital Media & Society	03
03	MTB 309	TV News Production & Presentation	03
04	MTB 316	Web Designing	03
05	MTB 312	Set Designing	03
06		Elective	03

Semester Seven

S#	Course Code	Course Title	CH
01	MTB 401	TV Studio & Floor Management	03
02	MTB 402	Documentary Production	03
03	MTB 415	Digital Media Analytics	03
04	MTB 416	Digital Storytelling	03
05		Elective*	03

Semester Eight

S#	Course code	Course Title	CH
01	MTB 417	TV Post Production	03
02	MTB418	Mass Media Research Methods	03
03	MTB 409	Research Project / Final Project	03
04	MTB 419	Elective* (Digital Media Literacy)	03

Total Credit Hours 133 + 02 Internship =135

*Elective course will be offered from the Electives List by the department conditional to the availability of resource and expertise

List of Elective Courses

S#	Course Code	Course Title	CH
1	MTB 104	Mass Media in Pakistan	03
2	MED 401	Online Journalism	03
3	MED 404	Development Support Communication	03
4	MED 207	Social Psychology	03
5	MTB 208	Comparing Media Systems	03
6	MTB 205	International Media Regulations	03
7	MTB 204	Writing for Internet	03
8	MED 306	Photojournalism	03
9	MED 437	2D/3D Animation	03
10	MTB 310	Television Commercial (TVC)	03
11	MTB 405	Television Program Analysis (Seminar)	03
12	MTB 410	Media Semiotics	03
13	MTB 411	Introduction to Film Making and Analysis	03
14	MTB 412	Electronic News Gathering (ENG)	03
15	MTB 413	Music Video Creation (MVC)	03
17	MTB 209	Evolution of Television	03
18	MTB 302	Process & Effects of Communication	03
19	MTB 311	Media & Social Psychology	03
20	MTB 404	TV & Globalization	03
21	MTB 403	Drama Production	03

22	MTB 414	Film and Cinematography	03
23	MTB 419	Digital Media Literacy	03

Course Code for Internship and Practical Learning Hours

MTB 430	Internship	02
MTB 450	Practical Learning hours	0

Eligibility for Internship (02 Credit Hours)

Internship support shall be available to the undergraduate program students who have earned a minimum of 90 credits. In other words, the students who have completed five semesters of their program shall be eligible to undertake internship.

Practical Learning Hours (Non credited – Mandatory) 80 hours

Students will be required to complete a minimum of 80 hours of practical learning (24 hours in first 4 and 56 hours in last 4 semesters of their degree) at BU Media House (FM, BU TV and Bahria Tribune). However, the students who fail to complete their hours during semester can complete during summer. For practical learning students will be offered various specialization streams such as audio and video editing, camera work, radio and TV anchoring & program production.

INCLUSION OF NEW ELECTIVES IN MS MEDIA STUDIES ROADMAP**Department of Media Studies****Course Outline**

Course Name	Film Studies and Critique	Prepared By	
Course Code	MSM 619		
Credit Hours	3	Revised on	
Course Prerequisite.	nil		
Course Prerequisite Code	-		
Course Type	Elective		
Program	MS-Media Studies		
Semester	MS-		

Course Description

This course provides an overview of cinema history, examines key topics in film theory and criticism in film culture. Concepts such as genre, authorship, national and transnational cinema, fandom, stardom, and other aspects as a cultural practice are the major domain to be discussed. The course examines works of cinema as cultural products that project worldviews and disseminate ideology. Films major concepts are to be discussed in their historical and political contexts. This analysis will facilitate the engagement and debates pertaining to class, race, gender and visual culture, technology, globalization, (neo) colonialism, and other topics. The course is specially designed to develop the analytical skills of students to understand the local and international cinema and in particular cultural invasion through foreign cinemas in Pakistan.

Course Learning Outcomes: By the end of the course, students will have

CLO.No.	Description:
1.	To develop critical thinking skills and tools of textual interpretation that will enable them not only to analyse a film's aesthetics and to evaluate its artistic merits also to discuss the political, ideological and cultural significance of works of cinema industry
2.	To develop skills to discuss the political, ideological and cultural significance of works of cinema industry
	To obtain film literacy and competency by learning how to use visual media
5	Analyze the ways in which film has a role in the shaping of identity, particularly along intersections of gender, race and class.
6	Demonstrate a critical understanding of the aesthetics, historical, and ideological dimensions of world cinema.
7	Developed informed strategies for working in a cross-disciplinary manner.

Teaching and Learning Methodology

1. Besides lectures, Film screenings will be the part of teaching methodology.
2. The combination of illustrated lectures and guest lectures by Film critics along with reading-based discussion in seminar will enable students to have both the breadth and depth of understanding.

Text Book(s)**Reference Book(s)**

- Film: A Critical Introduction (3rd edition) by Maria Pramaggiore and Tom Wallis 166
Bordwell, David, and Kristin Thompson. Film Art: An Introduction. 10thed. New York:
McGraw-Hills, 2013
- Hayward, Susan. Cinema Studies: The Key Concepts. 4th ed. London: Routledge, 2013.
- Dussere, Erik. America is elsewhere: the noir tradition in the age of consumer culture. N.Y.: Oxford Univ. Press, 2014.

- Osteen, Mark. *Nightmare alley: film noir and the American dream*. Baltimore: Johns Hopkins, 2013.
- Wee, Valerie. *Japanese horror films and their American remakes*. N.Y.: Routledge, 2014.
- Andrew, Dudley, ed. *Opening Bazin: post-war film theory and its aftermath*. N.Y.: Oxford Univ. Press, 2011.
- Coon, David. *Look closer: suburban narratives and American values*. New Brunswick, N.J.: Rutgers Univ. Press, 2014.
- Wilson, Scott. *Politics of insects: David Cronenberg's cinema of confrontation*. N.Y.: Continuum, 2011.
- Conversations at the American Film Institute: the next generation. N.Y.: Knopf, 2012.
- Decherney, Peter, *Hollywood's copyright wars*. N.Y.: Columbia University Press, 2012.
- Kuhn, Annette. *A dictionary of film studies* / Annette Kuhn, Guy Westwell. New York: Oxford University Press, 2012
- Women on Screen by M.Waters

Grading Policy

	Assessment Instrument	Percentage	
	Quizzes: Film reviews 05% Presentations 05%	10%	
	Assignments: Project Presentations 10% Research report 10%	20%	
	Mid Term Exam	30%	
	Final Exam	40%	

Week-wise Course Outline

Session #	Contents	Activities (Case Studies, Role-Plays, Movie-Clips, Exercises, Presentations, Homework)
1	Basics: Aesthetics, History, Meaning a. Introduction to Films as from of Media b. Short Film History (Developments, Hollywood, Indian and Pakistani Cinema) c. Films and Meanings: Semiology of Cinema in USA, China, India and Pakistan	Class Discussion on its importance as well as its relevance in the industry and with audience.
2	Films Narrative and Style a. Fiction b. Comedy	Class Activity Class Discussion
3	Films Narrative and Style c. Horror d. Action	Extracts from films relevant to the topic
4	Films Narrative and Style e. Thematic f. Doco-Films	Analysis of variety of Contents for Class discussion
5	Cinematography and Mise-en-scene a. Heroes and Demon (Shots) b. Lights as tool of interplay g. Framing and the Long Take Screening h. Sounds i. Editing and animations	Extracts from films relevant to the topic. Guest Lecture by Director, Cinematographer, Sound Engineer, Editor and Animators to discuss the Lighting, sound effects and controls, Editing techniques and animations and effects of the relevant shots
6	Cinematography and Mise-en-scene g. Framing and the Long Take Screening	Extracts from films relevant to the topic. Guest Lecture by Director,

		h. Sounds	Cinematographer, Sound Engineer, Editor and Animators to discuss the Lighting, sound effects and controls, Editing techniques and animations and effects of the relevant shots
7		Cinematography and Mise-en-scene h. Sounds i. Editing and animations	Extracts from films relevant to the topic. Guest Lecture by Director, Cinematographer, Sound Engineer, Editor and Animators to discuss the Lighting, sound effects and controls, Editing techniques and animations and effects of the relevant shots
8		Pakistani and Indian Cinema (Review) a. Urdu Cinema b. Punjabi Cinema c. Pashto Cinema d. Reasons of Major of Decline of Pakistani Cinemas e. Comparison of Indian and Pakistani Films	Class Discussion
9		Pakistani and Indian Cinema (Review) Urdu Cinema	Studying contents from selected Urdu Movies
10		Pakistani and Indian Cinema (Review) a. Punjabi Cinema b. Pashto Cinema	Examining content from different movies for critical analysis
11		Pakistani and Indian Cinema (Review) Reasons of Major of Decline of Pakistani Cinemas	Guest Lecture by Industry expert
12		Pakistani and Indian Cinema (Review) Comparison of Indian and Pakistani Films	Examining content from different movies and Guest Lecture by Prominent Film Critic
13		The Dream Factory: Hollywood, Ideology, and the Business of Filmmaking a. Cultivation of reality through cinema b. Propaganda through films	Case Studies, Film reviews and relevant research papers. Guest lecture by Film Critic.
14		Modes of Filmmaking: Politics, Society, Ideology	Class Discussion
15		Screening of selected movies for critical review by students	Class discussions on reviews by students

Department of Media Studies**Course Outline**

Course Name	Media and Human Rights	Prepared By	
Course Code	MSM 620		
Credit Hours	3		
Course Prerequisite.	nil		
Course Prerequisite Code	-	Revised on	
Course Type	Elective		
Program	MS-Media Studies		
Semester	MS-		

Course Description

Media and Human Rights is an innovative course bringing together the study of traditional human rights concerns regarding the media and current debates regarding the role played by the media within the field of human rights. It aims to consider the protections offered to the media by human rights law, the role played by the media within human rights and the mediatization of human rights - its turn to advocacy, representation and communication. The course will consider topics such as free speech, hate speech, privacy, the protection of journalists in conflict, human rights reportage, fact-finding and witnessing, the internet, social media and human rights. Case studies will include: Wikileaks, online advocacy such as Kony 2012, the role of social media in the Arab Spring and debates regarding 'clicktivism'. There will also be consideration of the resilience of human rights concepts in terms of internet regulation and internet freedom. This course will be of interest to students with an interest in human rights law and how it applies in the context of media. It will offer a balance of theoretical and practical insights and provide the opportunity for students to engage in research in a new and dynamic field. As such, it will be of particular interest to those students seeking future employment in the field of journalism, print/electronic media, communication and marketing as well as traditional advocacy work. The course complements other JD course offerings in the area of human rights law and media.

Media and Human Rights aims to critically consider traditional human rights concerns regarding the media and current debates regarding the role played by the media within the field of human rights. To do so the course considers both the relevant human rights protections for and limits placed upon the media, along with examination of the mediatization of human rights. It will offer a balance of theoretical and practical insights and provide the opportunity for students to engage in research in a new and dynamic field. The course will equip students with a human rights framework with which to assess the challenges and possibilities posed by the rise of digital media and the internet. This course will provide coverage of both core principles such as free speech, privacy and the protection of journalists, along with an engagement with detailed case studies and the emerging scholarship in this developing area.

Course Learning Outcomes

CLO.No.	At the conclusion of this course, students should be able to:
1.	Understand the relationship between the media and human rights and acquire the basic knowledge of human rights and role of media
2.	Have a sound knowledge of the main legal concepts and principles within human rights and international law with regards to the media
3.	SOLVE, ANALYZE and EVALUATE the dynamics of human rights, theories and its relation to media.
4.	Understand the role the media plays within the human rights system and DEMONSTRATE individually the significance of human rights and media in Pakistan.
5.	Critically assess the problems and possibilities which the media and the internet pose for human rights as a field
6.	Articulate his/her knowledge and understanding in oral and written presentations

7.	Integrate scholarship within media and human rights within the existing framework of human rights law and practice		
Teaching and Learning Methodology			
1- Besides lectures, Training, Workshop and Seminars by the experts. 2- Guest lectures to provide them an insight on Human rights and Media. The combination of illustrated lectures and guest lectures on human rights along with case studies-based discussion will enable students to have both the breadth and depth of understanding. 3- Written Assignments / Research Reports 4- Presentations by Individual Students/ Group Presentation			
Text Book(s)			
Reference Book(s)			
1- Human Rights (Theory and Practice), Barrister Zafarullah Khan, Pakistan, Law House, Karachi, 2013. 2- Human Rights and a changing media landscape, Thomas Hummarberg, 2015 3- Human Rights and Media, Handbook, F.G Chiweshe, Loewenstern, Ronit, Moyo, Human rights trust of Southern Africa, 2003 4- Human Rights and Media, in Diana Papademas, Human Rights and media (studies in communication, volume 6) Emerald Group of Publishing Limited, 2011 5- Human Rights Declaration & Convention (Available on Net) 6- Human Rights Reporting, Peter McIntyre, Council of Europe, by IFJ, 2011 7- Mass Media and Society Second Edition, Arnold, Curran J and Gurevitch , London, 1997 8- Our Right Our Information, Cecelia, Commonwealth Initiative, London, 2008 9- Gender, Human Rights and Environment, Dr. Shweta, Kunal Books, New Delhi, 2010			
Grading Policy			
	Assessment Instrument		Percentage
	Quizzes: Display of Photographs, documentaries and short films 05% Case Studies 05%		10%
	Assignments: Report Writing 10%, Presentation 10%		20%
	Mid Term Exam		30%
	Final Exam		40%
Week-wise Course Outline			
Session #	Contents	Activities (Case Studies, Role-Plays, Movie-Clips, Exercises, Presentations, Homework)	
1	Introduction, Background and scope of Human Rights Concepts, Human Right theories and historical examples Social and Academic Platform		
2	United Nations Declaration of Human Rights (UDHR) Signatory Countries & their socio-political conditions United Nations	Class Discussion	
3	Pakistan Constitution - 1973	Class Discussion	

	Fundamental Rights Awareness of Human Rights and Fundamental Rights	
4	Laws (Laws of lands) for protection Individual status/ community status Traditional, Tribal and Communal Laws	Guest lecture by legal expert, class discussion
5	Human Rights & Culture Human Rights & Environment Human Rights and Development	Class Discussion
6	Human Rights & Valuable Community Human Rights & Women Rights Human Rights and Child Rights Human Rights & Bonded Labor	Critical Essays, Research papers, Guest Lecture by relevant experts
7	Media and Human Rights Why is the study of Human Rights? Communication Freedom versus Communication Rights Freedom of information and the Media Political determinants of Media Freedom	Case Studies, Class Discussions
8	Foreign Policy, Media and Human Rights Public diplomacy, Media and Human Rights How it is related to Human Rights journalism News about Human Rights History of Human Rights Reporting Honest Journalism versus Objective Journalism Importance of News How to write news on human rights issues.	Case Studies, News reports, International and Local work for class discussion
9	Human Rights & News Framing Media Bias and Framing Analysis Human Interest stories, Civil Liberties and Human Rights Imaging the Human Rights	Extracts of films for class discussion, Documentaries, Case Studies, Photojournalism
10	Global Media Ethics Human Rights & Right to Information Human Rights & Media Ethics Media, Privacy and Human Rights Human Rights & Media Profession Human Rights and Media Language International Reporting	Class Discussion
11	Media, Privacy and Human Rights Civic organizations, Human Rights & Media International NGOs Media, Human Rights and National NGOs Media, Human Rights and Refugees.	Guest Lecture, Case Studies, Class Discussion

		Media Human Rights and conflict Reporting	
12		Human Rights and the Digital Age Mediating the Human Rights Messages Media and Information Literacy Theorizing the Digital Media Culture: The Politics of Watching and being Watched Human Rights, Media and Mass Surveillance in Digital Age	Case Studies and class discussion
13		Digital Activism, Live Witnessing and Human Rights Social Media and Human Rights advocacy Understanding the opportunities, Challenges and risk of Human Rights activism in digital era	Class discussion Thematic work on the human rights issue in the identified areas and the practical participation of the students to take the photographs and prepare documents and short films to focus and highlight the human rights issues to support and promote the public agenda.
14		The rise of transnational celebrity advocacy for Human Rights Social disability rights activism	Class Discussion Project Display and class discussion
15		Revision Video production on human rights issue Participation and observation, analysis of the documentaries and short films	Film Screening for class discussion

ROADMAP OF BSS (SOCIOLOGY)**Roadmap of BSS****Semester - 1**

Course Code	Course Title	Credit Hours	Pre-Requisite
ENG 103	English I	3	
PAK 102	Pakistan Studies	3	
BES 101	Introduction to Computers	3	
HSS 110	Introduction to Development Studies	3	
HSS 111	Introduction to International Relations	3	
HSS 115	Introduction to Media Studies	3	

Semester - 2

Course Code	Course Title	Credit Hours	Pre-Requisite
ENG 104	English II	3	English I
ENV 105	Introduction to Environmental Sciences	3	
BES 106	Research Methodology	3	
BES 103	Critical Thinking	3	
HSS 202	Introduction to Sociology	3	
HSS 102	Introduction to Philosophy	3	

Semester - 3

Course Code	Course Title	Credit Hours	Pre-Requisite
ENG 201	Oral Communication	3	English II
MAT 105	Mathematics	3	
ISL 100	Islamic Studies	3	
HSS 201	Introduction to Anthropology	3	
HSS 112	Introduction to Political Science	3	
HSS 107	Introduction to Psychology	3	

Majors in Sociology**Semester - 4**

Course Code	Course Title	Credit Hours	Pre-Requisite
SCO 301	Classical Sociological Theories	3	
SCO 304	Quantitative Research Methodology	3	
SCO 307	Sociology of Gender Issues	3	
HSS 400	Philosophy of Social Sciences	3	
SCO 308	Sociology of Youth	3	
SCO 311	Population dynamics	3	

Semester - 5

Course Code	Course Title	Credit Hours	Pre-Requisite
SCO 302	Pakistani Society and Culture	3	
SCO 303	Sociology of Migration & Urbanization	3	
SCO 305	Qualitative Research Methodology	3	
SCO 306	Contemporary Sociological theories	3	
SCO 315	Sociology of Social Change and Development	3	
SCO 326	Rural Development	3	

Semester - 6

Course Code	Course Title	Credit Hours	Pre-Requisite
SCO 316	Sociology of Education	3	
SCO 317	Sociology of Globalization	3	
SCO 320	Political Sociology	3	
SCO 324	Sociology of Media	3	
SCO 325	Sociology of Law & Human Rights	3	
SCO 314	Sociology of Health	3	

Possible time for 2-months Internship in the summers.

Semester - 7

Course Code	Course Title	Credit Hours	Pre-Requisite
SCO 331	Sociology of Race and Ethnicity	3	
SCO 327	Urban Development	3	
SCO 334	Sociology of Religion	3	
SCO 336	Sociology of Family and Marriage	3	
RES 300	Review of Literature & Research Proposal	1	
RES 400	Data Collection & Seminars	3	

Semester - 8

Course Code	Course Title	Credit Hours	Pre-Requisite
SCO 321	Environmental Sociology	3	
SCO 309	Project Planning and Management	3	
SCO 335	Sociology of Emotions and Human Feelings	3	
SCO 338	Sociology of Governance and Social Policy	3	
RES 500	Research Paper, Writing & Defense	2	Data Collection & Seminars

Note: RES 300, RES 400 and RES 500 are for Research Students Only.

Majors in Sociology

Students of Sociology must complete 78 credit hours of taught courses in their area of concentration with the following distribution:

24 hours of foundation courses; and

- a. 42 hours of major courses,
- b. 12 hours of minor courses.

Optional research paper worth 6 credits from the 7th semester onwards is also offered. Those opting for research will be exempted from two courses worth 6 Credit hours.

<u>Foundation Courses (08 Courses)</u>		<u>Credit Hours</u>
SCO 301	Classical Sociological Theories	3
SCO 302	Pakistani Society and Culture	3
SCO 303	Sociology of Migration & Urbanization	3
SCO 304	Quantitative Research Methodology	3
SCO 305	Qualitative Research Methodology	3
SCO 306	Contemporary Sociological theories	3
SCO 307	Sociology of Gender Issues	3
HSS 400	Philosophy of Social Sciences	3

Major Courses (14 Courses)

SCO 308	Sociology of Youth	3
SCO 309	Project Planning and Management	3
SCO 310	Community Development	3
SCO 311	Population Dynamics	3
SCO 312	Rural Sociology	3
SCO 313	Urban Sociology	3
SCO 314	Sociology of Health	3
SCO 315	Sociology of Social Change and Development	3
SCO 316	Sociology of Education	3
SCO 317	Sociology of Globalization	3
SCO 318	Organizational Behaviour	3
SCO 319	Human Resource Management	3
SCO 320	Political Sociology	3
SCO 321	Environmental Sociology	3

SCO 322	Conflict Resolution	3
SCO 323	Clinical Sociology	3
SCO 324	Sociology of Media	3
SCO 325	Sociology of Law & Human Rights	3
SCO 326	Rural Development	3
SCO 327	Urban Development	3
SCO 328	Industrial Sociology	3
SCO 329	Islamic Sociology	3
SCO 330	Sociology of Aging	3
SCO 331	Sociology of Race and Ethnicity	3

Minor Courses (4 Courses)

SCO 332	Criminology	3
SCO 333	NGO Management	3
SCO 334	Sociology of Religion	3
SCO 335	Sociology of Emotions and Human Feelings	3
SCO 336	Sociology of Family and Marriage	3
SCO 337	Sociology of Violence & Terrorism	3
SCO 338	Sociology of Governance and Social Policy	3
SCO 339	Public Sociology	3

Research Courses (3 courses)

RES 300	Review of Literature & Research Proposal	1
RES 400	Data Collection & Seminars	3
RES 500	Research Paper Writing & Defense	2

Approval of the Vision, Mission, Program Learning Objectives and Outcomes offered in the Faculty of Professional Psychology

Vision

To become an internationally recognized institute/department contributing toward the development of society, and to achieve excellence through innovation in education, research and professional practice in psychology.

Mission

To develop creative thinking, achieving excellence in academics through education, applied research and professional practice in Psychology. To effectively deal with societal challenges by establishing long-term mutually beneficial connections with the national/international industry and community.

PhD Professional Psychology

Mission

To provide candidates with academic opportunities for the development of specialized skills in professional practice and psychological research.

Program Objectives

1. To develop professional consultative skills through immersion in intensive coursework, internship and field placement.
2. To develop specialized skills related to psychological research.

Program Outcomes

1. To be able to work independently in specialized domains providing professional services for individual growth and societal welfare.
2. To be able to contribute in the field of applied research and its application in relevant domains

MS Clinical Psychology / MPhil Professional Psychology

Mission

To provide opportunities for the development of relevant knowledge and skills needed in supervised practice and psychological research.

Program Objectives

1. To enable the enhancement of relevant knowledge through immersion in coursework.
2. To develop specific technical skills through internships and practical field based applications.
3. To conduct psychological research according to internationally approved standards.

Program Outcomes

1. To work in professional settings by applying experiential knowledge.
2. To work as professional psychologists under supervision utilizing technical skills for the benefit of individuals and groups.

3. To be able to conduct psychological research and contribute in the growth and development of field based knowledge.

BS Psychology

Mission

To develop theoretical knowledge, and basic skills for contributing positively toward individual and societal growth.

Program Objectives

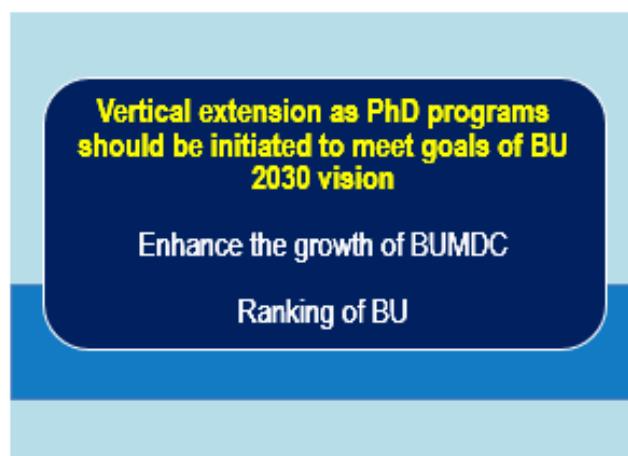
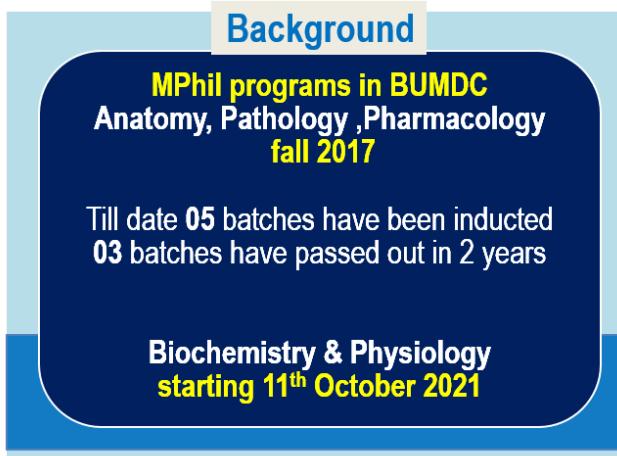
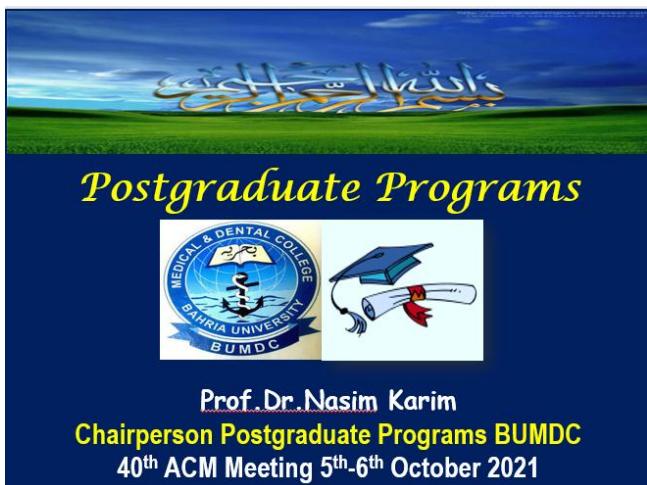
1. To develop a thorough understanding of psychology including theory, practice, and professional ethics.
2. To develop an understanding of basic skills related to psychological research.
3. To learn skills necessary for contributing positively toward self-growth and community development.

Program Outcomes

1. To be able to apply theoretical and practical concepts of psychology in applied settings under supervision.
2. To be able to assist in psychological research.
3. To apply acquired skills for personal growth and effective community development practices.

PROPOSED FINANCIAL EFFECTS - HOUSE JOB FOR DPT STUDENTS

CURRENT BATCH (22 STUDENTS)	
Monthly Stipend per student	Rs.15000/Month
For 22 students (Monthly)	Rs.33,0000/Month
For 22 Students (Yearly)	Rs. 39,60,000/Year
60 STUDENTS	
Monthly Stipend per student	Rs.15000/Month
For 60 students (Monthly)	Rs.9,00000/Month
For 60 Students (Yearly)	Rs. 10800000/Year

PRESENTATION – LAUNCH OF PHD PROGRAMME AT BUMDC

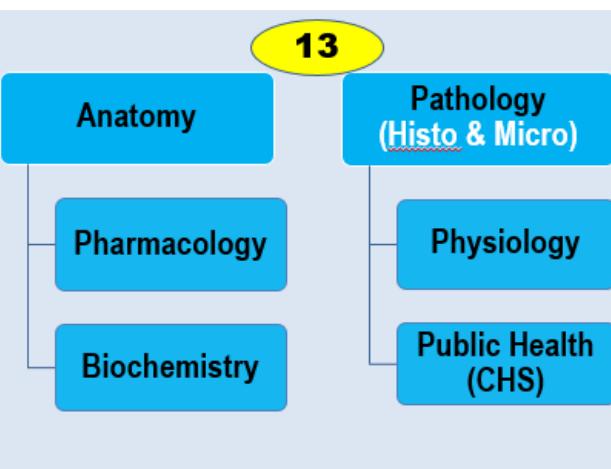
Vision till 2030	Medical	Dental	Physical Therapy	Nursing	Public Health	MLT
2020-21	MPhil Bio & Phy					
2021-22		MPhil Dental Materials				
2022-23	PhD Ana, Pat, Pharm Bio, Phy, PH	MPhil Commun dent			MPhil MPH	
2023-24		MPhil Oral Biology	MPhil	MPhil	MPhil MPH	MPhil
2024-25		MPhil Oral Patho	MPhil	MPhil	MPhil MPH	MPhil
2025-26		PhD & MDS	MPhil	MPhil	MPhil MPH	MPhil
2026-27		PhD & MDS	MPhil	MPhil	PhD	MPhil
2027-28	MPhil, Vir, Hem	PhD & MDS	PhD	PhD	PhD	PhD
2028-29	M Phil Genet	PhD & MDS	PhD	PhD	PhD	PhD
2029-30	M Phil Mol . Biol	PhD & MDS	PhD	PhD	PhD	PhD



It is therefore proposed to launch a common PhD program under Faculty of Health Sciences with degree as:

Doctor of Philosophy in (speciality name)
 Faculty of Health Sciences
 Bahria University

02	Anatomy	02	Physiology
02	Pharmacology	01	Pathology (1)
04	Biochemistry	01	CHS
12+(1)			



In conventional system **09** more PhDs will be needed for separate programs in **07** specialties

Meeting this number game will delay launch of PhD programs by many years

It will also make PhD program launch impossible in some subjects as mentioned earlier

MPhil programs in subsequent years may be undermined - HEC - include Bachelor's degree as eligibility for admissions in PhD program

Recommendation

Permission be granted to start a common PhD program under Faculty of Health Sciences

Upon approval of request
 HODs will initiate preparation of Launch Proposal Application

Academic & Financial growth of BU

Thank You

APPROVAL FOR INDUCTION OF CIVILIAN STUDENTS IN BS (NURSING) PROGRAM AT PNNC**Background of the Case**

1. Pakistan Navy Nursing College (PNNC) was launched under PNS SHIFA in 1982, and was declared the Constituent Unit of Bahria University in 2014 for BS (Nursing) programme; under the Dean Health Sciences for all academic matters. BU degrees were first time awarded to the PNNC graduates in 2019.
2. BS Generic Nursing was approved for the College in 2014 by Pakistan Nursing Council (PNC) for 25 female admissions, which was later upgraded to 30 candidates by the GHQ.
3. Pakistan Nursing Council during its 24th session held on 8 February 2019, approved 150 seats in the 4-year Generic BSN Degree Program at PNNC, Karachi. However, the College has retained the earlier admission limit of 30 seats per semester.
4. Considering the available faculty and requisite infrastructure, the College proposes to increase its semester intake by inducting the civilian students in BSN programme.

Financial Effects**Expected Income**

Year	No. of Students	Year	Fees (Rs in Million)	Total Fee (Rs)	Grand Total (Rs)
Year 1	20 students (1 st yr)	2022	0.05+ 0.15= 0.2	4 M	4 M
Year 2	50 students (1 st yr) 20 students (2 nd yr)	2023	0.05+ 0.15= 0.2 0.15	10 M 3 M	13 M
Year 3	75 students (1 st yr) 50 students (2 nd yr) 20 students (3 rd yr)	2024	0.05+ 0.15= 0.2 0.15 0.15	15 M 10 M 3 M	28 M

Expected Expenditure (Recurring)

Salaries	Year 1 (Rs)	Year 2 (Rs)	Year 3 (Rs)
Faculty	0.2 M (2)*	0.4M (4)*	0.6 M (6)*
Administration	0.1 M (3)	0.1 (3)	0.1(3)
Annual expenditure	3.6M	5.8M	8.4 M
Library Books / Journal Subscription	1.5 M	2 M	2.5 M
Science Lab	1 M	1M	-
Advertisements	0.2M	0.3M	0.4M

Income versus Expenditure

Timeframe	Admissions	Income (Rs)	Expenditure (Rs)	Profit (Rs)
Year 1 – 2022	20	4 M	6.3 M	Nil
Year 2 – 2023	50	13M	9.1M	3.9M
Year 3 – 2024	75	28M	11.3 M	16.7M

EXISTING TRANSCRIPT

S.No. 0109382



BAHRIA UNIVERSITY

ISLAMABAD

SHIFA COLLEGE OF NURSING, ISLAMABAD FINAL TRANSCRIPT (REVISED) Programme: Post RN B.Sc Nursing*

Registration No: 18896
 Name: Ambreen Siddique
 Father's Name: Siddique
 Date of Birth: 06 January 1980
 CNIC No: 38403-2030397-6

Roll No: 8675
 Final Professional: Supplementary 2009
 Held in: December 2009
 Date of Admission: 08 January 2008
 Mode of Study: Regular

Year-I (Semester-I)

Course Code	Title	Grade	Grade Point	Credit Hours	Prod.
NCIN111	Concepts in Nursing	B	15	5	75
NSLS115	Life Sciences	B	12	4	48
NSP112	Pathophysiology	C	8	4	32
NENG114	English-I	B+	10.5	3	31.5
NSS126	Sociology	B	7.5	2.5	18.75
GPA:		2.86	CGPA:		2.86

Year-II (Semester-III)

Course Code	Title	Grade	Grade Point	Credit Hours	Prod.
NCACMHN211	Advanced Concept in Mental Health Nursing (Theory)	C+	7.5	3	22.5
NCACMHN211	Advanced Concept in Mental Health Nursing (Clinical)	C+	10	4	40
NCACCH212	Advanced Concept in Community Health Nursing	C	14	7	98
NENG214	English-III	C	7	3.5	24.5
GPA:		2.20	CGPA:		2.70

Year-I (Semester-II)

Course Code	Title	Grade	Grade Point	Credit Hours	Prod.
NCTL123	Teaching & Learning	B	9	3	27
NCAC121	Advance Concepts in Nursing	B	16.5	5.5	90.75
NSBS122	Introduction to Biostatistics	C	6	3	18
NCCHA113	Health Assessment	B+	10.5	3	31.5
NENG124	English-II	B	6	2	12
NHPB125	Behavioral Psychology	A	8	2	16
GPA:		3.03	CGPA:		2.96

Year-II (Semester-IV)

Course Code	Title	Grade	Grade Point	Credit Hours	Prod.
NCEPD223	Ethical & Professional Development in Health Care	A	6	1.5	9
NCSE222	Senior Electives	B	25.5	8.5	216.75
NSNR221	Nursing Research	C	6	3	18
NENG224	English-IV	B	7.5	2.5	18.75
GPA:		2.90	CGPA:		2.75


Director Examination
 Shifa College of Nursing, Islamabad

First Professional Examination

S.No	Title	Marks Obtained		Total	Status
		Theory (Max 100)	Practical (Max 100)		
1	Concepts in Nursing-I	73	-	73	Pass
2	Humanities-I	79	-	79	Pass
Total	152	-	-	152	76.00%

Final Professional Examination

S.No	Title	Marks Obtained		Total	Status
		Theory (Max 100)	Practical (Max 100)		
1	Concepts in Nursing-II	68	-	68	Pass
2	Humanities-II	63	-	63	Pass
Total	131	-	-	131	65.50%

Dated: 17 July 2019

Note: Errors & omissions exempted.

Shangrila Road, Naval Complex, Sector E-8 Islamabad, Pakistan Tel: (92)51-9260002-7 Ext 212, Fax: (92)51-9260885


Director Examinations
 Bahria University, Islamabad

REVISED DRAFT TRANSCRIPT**REVISED DRAFT****SHIFA COLLEGE OF NURSING, ISLAMABAD**

FINAL TRANSCRIPT (REVISED)

Programme: Bachelor of Science in Nursing (Post RN)*

Registration No: 18896
 Name: Ambreen Siddique
 Father's Name: Siddique
 Date of Birth: 06 January 1980
 CNIC No: 38403-2030397-6

Roll No: 8675
 Final Professional: Supplementary 2009
 Date of Completion: December 2009
 Date of Admission: 08 January 2008
 Type of Enrollment: Full-Time

Year-I (Semester-I)

Course Code	Title	Grade	Grade Point	Credit Hours	Product
NCIN111	Concepts in Nursing	B	3	5	15
NSLS115	Life Sciences	B	3	4	12
NSP112	Pathophysiology	C	2	4	8
NENG114	English-I	B+	3.5	3	10.5
NSS126	Sociology	B	3	2.5	7.5
GPA:		2.86	CGPA:	2.86	

Year-I (Semester-II)

Course Code	Title	Grade	Grade Point	Credit Hours	Product
NCCTL123	Teaching & Learning	B	3	3	9
NCAC121	Advance Concepts in Nursing	B	3	5.5	16.5
NSEBS122	Introduction to Biostatistics	C	2	3	6
NCCHA113	Health Assessment	B+	3.5	3	10.5
NENG124	English-II	B	3	2	6
NHPB125	Behavioral Psychology	A	4	2	8
GPA:		3.03	CGPA:	2.96	

Total Credit Hours Earned: 74

Year-II (Semester-I)

Course Code	Title	Grade	Grade Point	Credit Hours	Product
NCACMHN2	Advanced Concept in Mental Health Nursing (Theory)	C+	2.5	3	7.5
NCACMHN2	Advanced Concept in Mental Health Nursing (Clinical)	C+	2.5	4	10
NCACCH212	Advanced Concept in Community Health Nursing	C	2	7	14
NENG214	English-III	C	2	3.5	7
GPA:		2.20	CGPA:	2.70	

Year-II (Semester-II)

Course Code	Title	Grade	Grade Point	Credit Hours	Product
NCEPD223	Ethical & Professional Development in Health Care	A	4	1.5	6
NCSE222	Senior Electives	B	3	3.5	25.5
NSNR221	Nursing Research	C	2	3	6
NENG224	English-JV	B	3	2.5	7.5
GPA:		2.90	CGPA:	2.75	

Additional Semester

Course Code	Title	Grade	Grade Point	Credit Hours	Product
NHP2426	Pakistan Studies	C	2	2	4
NHHS326	Islamic Studies	C+	2.5	2	5
GPA:		2.17	CGPA:	2.63	

Print Date: 2 August 2021

Note: Errors & omissions excepted.

Program Status: Completed**Controller of Examinations**
Bahria University, Islamabad**First Professional Examination**

S.No	Title	Marks Obtained		Total	Status
		Theory (Max 100)	Practical (Max 100)		
1	Concepts in Nursing-I	73	-	73	Pass
2	Humanities-I	79	-	79	Pass
Total		152	-	152	76.00%

Final Professional Examination

S.No	Title	Marks Obtained		Total	Status
		Theory (Max 100)	Practical (Max 100)		
1	Concepts in Nursing-II	68	-	68	Pass
2	Humanities-II	63	-	63	Pass
Total		131	-	131	65.50%

* This is a two years degree Program consists of minimum 74 credit hours with semester-based exams conducted by the Shifa College of Nursing and Professional Examinations (First & Final Professional) conducted by Bahria University. Overall percentage obtained 70.75 % (283/400).

GENERAL INFORMATION**Bahria University Charter Date**

07 February 2000

Basic Admission Requirement for the Program

A minimum of second division in the Diploma in General Nursing.

Affiliation with Bahria University

Shifa Nursing College was affiliated with BU from 17 January 2008 till 19 January 2013.

Medium of Teaching

English is the medium of teaching for all programs conducted at Bahria University.

Transcripts

Following type of transcripts are issued to the students at Bahria University:

a. Final Transcript

Final transcript will be issued when all the degree requirements have been completed.

b. Interim Transcript

It is issued at the end of each semester (except final semester). Program incomplete is depicted on interim transcript.

Authentication

Final transcripts are light beige in colour. They bear embossed university seal, security water markings & Controller of Examinations signatures on its face (Alteration and/or forgery of this documents is a criminal offense liable to be tried in the court of Law).

Grading System

Following grading system (absolute) is used at Bahria University:

<u>Letter Grade</u>	<u>Percentage</u>	<u>Grade Point</u>
A	85-100	4
B+	80-84	3.5
B	72-79	3
C+	66-71	2.5
C	60-65	2
F	Below 60	0
W	Withdrawal	

Prepared By : _____

AC Exams : _____
(For Semesters Section Only)

Date: 30 July 2021

ANNEX A - FINAL TRANSCRIPT - ANNUAL PROGRAM**BAHRIA UNIVERSITY MEDICAL & DENTAL COLLEGE, KARACHI**
Bachelor of Medicine & Bachelor of Surgery***FINAL TRANSCRIPT**

Student's Name: MANAHIL
 Father's Name: ALLAH YAR MALIK
 Date of Birth: 25 Aug 1999
 CNIC/ Passport No: 36302-618656-8

Reg No: 45487
 Roll No: 34568
 Date of Admission: 22 December 2015
 Final Professional: Annual 2020
 Held In: February 2021

First Prof (Part-I)

S. No	Subject(s)	Maximum Marks			Marks Obtained			Pass/Fail	Percentage
		Theory	Practical	Total	Theory	Practical	Total		
1	ANATOMY & HISTOLOGY	100	100	200	76	94	170	PASS	85.00
2	BIOCHEMISTRY	100	100	200	78	92	170	PASS	85.00
3	PHYSIOLOGY	100	100	200	77	91	168	PASS	84.00
	Total			600			508		84.67

First Prof (Part-II)

S. No	Subject(s)	Maximum Marks			Marks Obtained			Pass/Fail	Percentage
		Theory	Practical	Total	Theory	Practical	Total		
1	ANATOMY & HISTOLOGY	100	100	200	85	88	173	PASS	86.50
2	BIOCHEMISTRY	100	100	200	81	93	174	PASS	87.00
3	PHYSIOLOGY	100	100	200	69	88	157	PASS	78.50
	Total			600			504		84.00

Second Prof

S. No	Subject(s)	Maximum Marks			Marks Obtained			Pass/Fail	Percentage
		Theory	Practical	Total	Theory	Practical	Total		
1	FORENSIC MEDICINE	100	100	200	72	87	159	PASS	79.50
2	GENERAL PATHOLOGY	150	150	300	128	106	234	PASS	78.00
3	PHARMACOLOGY	150	150	300	123	124	247	PASS	82.33
	Total			800			640		80.00

Third Prof

S. No	Subject(s)	Maximum Marks			Marks Obtained			Pass/Fail	Percentage
		Theory	Practical	Total	Theory	Practical	Total		
1	COMMUNITY MEDICINE	150	150	300	110	104	214	PASS	71.33
2	OPHTHALMOLOGY (EYE)	100	100	200	78	82	160	PASS	80.00
3	OTORHINOLARYNGOLOGY (ENT)	100	100	200	86	86	172	PASS	86.00
4	SPECIAL PATHOLOGY	150	150	300	114	128	242	PASS	80.67
	Total			1000			788		78.80

Fourth Prof

S. No	Subject(s)	Maximum Marks			Marks Obtained			Pass/Fail	Percentage
		Theory	Practical	Total	Theory	Practical	Total		
1	MEDICINE	300	300	600	220	231	451	PASS	75.17
2	OBSTETRICS & GYNAECOLOGY	200	200	400	143	160	303	PASS	75.75
3	PAEDIATRICS	100	100	200	68	66	134	PASS	67.00
4	SURGERY	300	300	600	243	239	482	PASS	80.33
	Total			1800			1370		76.11

Marks Obtained: 3810 (Three Thousand Eight Hundred Ten)

Total Marks: 4800

Overall Percentage: 79.38

*The program consists of 5 years (4 Professional Examinations).

Date: 17 September 2021

Controller of Examinations

GENERAL INFORMATION**Bahria University Charter Date**

7 February 2000

Accrediting Body Approval for Program

PMDC NOC # PF.7-E-2008(Council)/108573 dated 26 December 2008

Basic Admission Requirement for the Program

A minimum of 65% marks in FSc Pre-Medical or equivalent.

Previous Degree Held by the Student

A LEVEL FROM IBCC ISLAMABAD

Academic Certificates

Students are awarded following certificates:

a. **Merit Certificate:**

Students scoring highest percentage in different professional subjects.

b. **Distinction Certificate:**

Students obtaining 80% or above marks in specific subjects.

Constituent Medical/ Dental College of**Bahria University**

Bahria University Medical and Dental College, Karachi.

Affiliated Medical/ Dental Colleges of Bahria University

Frontier Medical & Dental College, Abbottabad.

Marking System

As per Pakistan Medical Commission (PMC) policies, annual system of examination is being followed in all Medical and Dental Colleges of Bahria University.

Marking Criteria

Following marking criteria is used for Annual Exams (MBBS & BDS):

Percentage	Status
Theory \geq 50%	Pass
Practical \geq 50%	Pass
Theory < 50 %	Fail
Practical < 50%	Fail
Absent in (Theory/ Practical)	Fail
Unfair Means (UFM)	Fail (on Interim Transcript only)

Types of Transcript

Following two types of transcripts are issued to the students at Bahria University:

a. **Final Transcript**

When all the degree requirements have been completed.

b. **Interim Transcript**

At the end of each Professional examination.

Medium of Teaching

English is the medium of teaching for all programs conducted at Bahria University.

Authentication of Transcript

Official transcripts are light beige in colour. They bear embossed university seal, security water markings and Controller of Examinations signature on its face. Alteration and / or forgery of this document is a criminal offense liable to be tried in the Court of Law and cancellation of the transcript.

Procedure for Issuance & Verification of Final TranscriptBahria University's documents (degrees & transcripts) are verified by the BU Head Office (Examinations Directorate). Procedure to apply for issuance and verification of said documents is given on Bahria University website www.bahria.edu.pk

Prepared by: _____
Checked by Asst Controller Exams: _____
Date: 16 September 2021

ANNEX B - FINAL TRANSCRIPT - SEMESTER-BASED PROGRAM (PG)

ISLAMABAD CAMPUS
Master of Business Administration*
Supply Chain Management
FINAL TRANSCRIPT



Student's Name : SAIFIULLAH
Father's Name : ARIF KHALIL SHEIKH
Date Of Birth : 02 October 1985
CNIC/ Passport No : 37405-7519496-5

Registration No : 62502
Enrollment No : 01-322191-020
Date of Admission : 04 February 2019
Mode of Study : Regular

Spring Semester 2019	
Course Code	Title
ACC 501	Financial Accounting
BCM 512	Business Communication
MGT 501	Theories & Practices of Management
MKT 522	Marketing Management
QTM 503	Stats & Math for Management

Grade	Grade Point	Cr. Hours	Product
A	4	3	12
A-	3.67	3	11.01
A	4	3	12
A-	3.67	3	11.01
A	4	3	12
GPA :	3.87		CGPA : 3.87

Fall Semester 2019	
Course Code	Title
ACC 503	Cost & Managerial Accounting
FIN 502	Financial Management
MKT 611	Human Resource Management
MIS 611	E-Commerce
RMT 620	Methods in Business Research
SCM 611	Supply Chain Management

Grade	Grade Point	Cr. Hours	Product
A	4	3	12
A-	3.67	3	11.01
A	3.67	3	11.01
B+	3.33	1.5	5
A-	3.67	3	11.01
A-	3.67	1.5	5.51
GPA :	3.70		CGPA : 3.79

Spring Semester 2020	
Course Code	Title
ECO 520	Economics
MGT 662	Strategic Management
SCM 616	Supply Chain Modeling
SCM 632	Execution & Control of Operations (ECO) in SCM
SDWV 634	Dissertation-I (Proposal Development)

Grade	Grade Point	Cr. Hours	Product
A-	3.67	3	11.01
A	4	3	12
A-	3.67	3	11.01
A-	3.67	3	11.01
A	4	3	12
GPA :	3.80		CGPA : 3.79

Fall Semester 2020	
Course Code	Title
MGT 651	Project Management
MGT 632	Corporate Leadership & Social Responsibilities
MKT 501	Entrepreneurship
SCM 634	Detailed Scheduling and Planning (DSP) in Supply Chain Management
SCM 635	Strategic Management of Resources in SCM (SMR)

Grade	Grade Point	Cr. Hours	Product
A-	3.67	1.5	5.51
A	4	1.5	6
A	4	3	12
A	4	3	12
A	4	3	12
GPA :	3.98		CGPA : 3.83

Thesis/Internship/CSP

Course Code	Title	Grade	Grade Point	Cr. Hours	Product
SDWV 700	Dissertation-II (Thesis Write-up & Defense) Completed on 25 February 2021	B+	3.33	3	9.99

Overall Percentage :

83.95

GPA :

3.33

CGPA :

3.80

60 Credit hours Completed.

* The Program consists of 60 credit hours, duration 2 years.

Print Date : 16 September 2021

Controller of Examinations

PROPOSED

Draft - PG Program

GENERAL INFORMATION**Bahria University Charter Date**

07 February 2000

HEC NOC Date for MS/ MPhil/ PhD Programs

25 October 2017

Basic Admission Requirement for the Program

Minimum 16 years of education in the relevant field of Psychology with a minimum of 50% marks or CGPA of 2.50/4.00.

Previous Degree Held by the Student

BS PSYCHOLOGY from INSTITUTE OF PROFESSIONAL PSYCHOLOGY, KARACHI, (BAHRIA UNIVERSITY, ISLAMABAD)

Academic Honors

Students achieving high standards are awarded following honors upon completion of their degree requirements:

- Summa Cum Laude ≥ 3.90
- Magna Cum Laude $\geq 3.80 \text{ To } < 3.90$
- Cum Laude $\geq 3.60 \text{ To } < 3.80$

Honors designations are indicated on the transcript.

Criteria for Award of Academic Honors

The student should have been regular in the entire degree program and should have taken full load in all semesters as per road map of degree program.

Ineligibility for Academic Honors

- Any course withdrawn or dropped.
- Any semester frozen.
- Repetition of any course.
- Any "F" or 'W' grade awarded in any Course.
- Credit Hours Transferred.
- Any of degree requirements not completed within the roadmap time frame.
- Has never been penalized in any disciplinary case at the University.

Grading System

Following grading system (absolute) is used at Bahria University:

Letter Grade	Percentage	Grade Point
A	$\geq 85 - < 100$	4
A-	$\geq 80 - < 85$	3.67
B+	$\geq 75 - < 80$	3.33
B	$\geq 71 - < 75$	3
B-	$\geq 68 - < 71$	2.67
C+	$\geq 64 - < 68$	2.33
C	$\geq 60 - < 64$	2
F	Below 60	0
W	-	Withdrawn

Medium of Teaching

English is the medium of teaching for all programs conducted at Bahria University.

Transcripts

Following types of transcript are issued to the students at Bahria University:

a. Final Transcript

Final transcript will be issued when all the degree requirements have been completed.

b. Interim Transcript

It is issued at the end of each semester (except final semester). Program incomplete is depicted on interim transcript.

Authentication

Final transcripts are light beige in colour. They bear embossed University seal, security water markings & Controller of Examinations signature on its face (Alteration and/or forgery of this document is a criminal offense liable to be tried in the Court of Law).

Procedure for Final Transcript

Procedure to apply for transcripts is given on Bahria University website www.bahria.edu.pk

Prepared by : _____
Checked by _____
Asst Controller Exams : _____
Date : 16 July 2021

ANNEX C - FINAL TRANSCRIPT - SEMESTER-BASED PROGRAM (UG)

ISLAMABAD CAMPUS
Bachelor of Business Administration*
HRM
FINAL TRANSCRIPT



Reg # : 52004
Name : ZIMAL HUMAYUN
Father's Name : SHEIKH HUMAYUN ZAFAR

Enrollment No: 01-111172-117
Date of Birth: 25 December 1997

Fall Semester 2017							Spring Semester 2018							Spring Semester 2019							Spring Semester 2020							Spring Semester 2021																			
Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.												
GTM 101	Business Mathematics-	B	3	9	9	GTM 120	Business Mathematics II / Numeracy Skills	B	3	9	9	GOC 383	Business Ethics	B	3	9	9	HIS 471	E-Commerce	A	3	9	9	MIS 467	Advanced Application of IT in Business	B+	3.5	9	9	MGT 467	Change Management	B+	3.5	9	9	MGT 469	Human Resource Research Methods	B+	3.5	9	9	MGT 468	Organizational Development	B+	3.5	9	9
ENG 106	Penultimate English	B	3	9	9	GTM 110	Business Statistics	B	3	9	9	GOC 384	Business Law	B	3	9	9	MGT 463	Corporate Skills	B+	3.5	9	9	MRA 469	Human Resource Research Methods	B+	3.5	9	9	MRA 468	Organizational Development	B+	3.5	9	9												
MIS 101	(Fin Business (Math, Excel))	B	3	9	9	GTM 123	English Writing Skills	B	3	9	9	GOC 385	Business Ethics	B	3	9	9	MIS 467	Change Management	B+	3.5	9	9	MIS 469	Human Resource Research Methods	B+	3.5	9	9	MIS 468	Organizational Development	B+	3.5	9	9												
ECO 106	Micro Economics	B+	3.5	9	12.5	GTM 131	Macroeconomics	B	3	9	9	GOC 386	Business Law	B	3	9	9	MGT 463	Corporate Skills	B+	3.5	9	9	MRA 469	Human Resource Research Methods	B+	3.5	9	9	MRA 468	Organizational Development	B+	3.5	9	9												
MGT 111	Principles of Management	A	4	3	12	GTM 132	Statistical Communication (Public Speaking)	B	3	9	9	GOC 387	Cost Accounting	B	3	9	9	MIS 467	Change Management	B+	3.5	9	9	MIS 469	Human Resource Research Methods	B+	3.5	9	9	MIS 468	Organizational Development	B+	3.5	9	9												
MKT 112	Principles of Marketing	B	3	9	9	GTM 141	Principles of Accounting	B	3	9	9	GOC 388	Decomology	B	3	9	9	MGT 463	Corporate Skills	B+	3.5	9	9	MRA 469	Human Resource Research Methods	B+	3.5	9	9	MRA 468	Organizational Development	B+	3.5	9	9												
GPA : 3.25 CGPA: 3.25							GPA : 3.55 CGPA: 3.55							GPA : 3.7 CGPA: 3.35							GPA : 3.6 CGPA: 3.35																										
Fall Semester 2018							Spring Semester 2019							Spring Semester 2020							Spring Semester 2021																										
Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.																		
BCN 201	Statistical Communication	B+	3.5	9	10.5	GOC 389	Business Ethics	B	3	9	9	HIS 472	Strategic Management	A	3	9	9	MIS 467	Change Management	B+	3.5	9	9	MIS 469	Human Resource Research Methods	B+	3.5	9	9	MIS 468	Organizational Development	B+	3.5	9	9												
ACC 102	Financial Accounting	B+	3.5	9	12.5	GOC 390	Business Law	B	3	9	9	MIS 471	Change Management	B+	3.5	9	9	MGT 463	Corporate Skills	B+	3.5	9	9	MRA 469	Human Resource Research Methods	B+	3.5	9	9	MRA 468	Organizational Development	B+	3.5	9	9												
IDL 201	Islamic Social Economic Studies	B	3	9	9	GOC 391	Cost Accounting	B	3	9	9	MIS 472	Strategic Management	B+	3.5	9	9	MGT 463	Corporate Skills	B+	3.5	9	9	MRA 469	Human Resource Research Methods	B+	3.5	9	9	MRA 468	Organizational Development	B+	3.5	9	9												
MKT 231	Marketing Management	A	4	3	12	GOC 392	Fundamentals of Finance	B	3	9	9	MIS 473	Supply Chain Management	B	3	9	9	MGT 463	Corporate Skills	B+	3.5	9	9	MRA 469	Human Resource Research Methods	B+	3.5	9	9	MRA 468	Organizational Development	B+	3.5	9	9												
MKT 232	Organizational Theory & Behavior	A	4	3	12	GOC 393	Geography	B	3	9	9	MIS 474	Training & Development	B	3	9	9	MIS 467	Change Management	B+	3.5	9	9	MIS 469	Human Resource Research Methods	B+	3.5	9	9	MIS 468	Organizational Development	B+	3.5	9	9												
GTM 203	Statistical Inference & Quantitative Research	B	3	9	9	GPA : 3.55 CGPA: 3.42	GPA : 3.55 CGPA: 3.42	GPA : 3.7 CGPA: 3.35	GPA : 3.6 CGPA: 3.35	GPA : 3.7 CGPA: 3.35																																					
Fall Semester 2019							Spring Semester 2020							Spring Semester 2021																																	
Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.																		
MGT 311	Career Easing Management	B+	3.5	9	10.5	GOC 394	E-Commerce	A	3	9	9	HIS 475	Strategic Management	B+	3.5	9	9	MIS 467	Change Management	B+	3.5	9	9	MIS 469	Human Resource Research Methods	B+	3.5	9	9	MIS 468	Organizational Development	B+	3.5	9	9												
FIN 301	Financial Management	B	3	9	9	GOC 395	Entrepreneurship	B	3	9	9	MIS 476	Strategic Management	B+	3.5	9	9	MGT 463	Corporate Skills	B+	3.5	9	9	MRA 469	Human Resource Research Methods	B+	3.5	9	9	MRA 468	Organizational Development	B+	3.5	9	9												
HRM 353	Human Resources Management	B	3	9	9	GOC 396	Managerial Economics	B	3	9	9	MIS 477	Supply Chain Management	B	3	9	9	MGT 463	Corporate Skills	B+	3.5	9	9	MRA 469	Human Resource Research Methods	B+	3.5	9	9	MRA 468	Organizational Development	B+	3.5	9	9												
ACC 394	Managerial Accounting	C+	2.5	7.5	7.5	GOC 397	Operations & Production Management	B	3	9	9	MIS 478	Training & Development	B	3	9	9	MIS 467	Change Management	B+	3.5	9	9	MIS 469	Human Resource Research Methods	B+	3.5	9	9	MIS 468	Organizational Development	B+	3.5	9	9												
HRM 360	Operational Research	B	3	9	9	GOC 398	Supply Chain Management	B	3	9	9	MIS 479	Strategic Management	B	3	9	9	MIS 467	Change Management	B+	3.5	9	9	MIS 469	Human Resource Research Methods	B+	3.5	9	9	MIS 468	Organizational Development	B+	3.5	9	9												
HRM 361	Social and Psychological Development	B+	3.5	9	12.5	GPA : 3.6 CGPA: 3.42	GPA : 3.6 CGPA: 3.42	GPA : 3.7 CGPA: 3.35	GPA : 3.6 CGPA: 3.35	GPA : 3.7 CGPA: 3.35																																					
Fall Semester 2020							Spring Semester 2021																																								
Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.																		
MGT 404	Analysis of Pakistan Industries & Businesses	A	4	3	12	GOC 399	Advanced Application of IT in Business	B+	3.5	9	9	HIS 480	Strategic Management	B+	3.5	9	9	MIS 467	Change Management	B+	3.5	9	9	MIS 469	Human Resource Research Methods	B+	3.5	9	9	MIS 468	Organizational Development	B+	3.5	9	9												
HRM 340	Capacity Planning & Management	A	4	3	12	GOC 400	Change Management	B+	3.5	9	9	MIS 470	Change Management	B+	3.5	9	9	MGT 463	Corporate Skills	B+	3.5	9	9	MRA 469	Human Resource Research Methods	B+	3.5	9	9	MRA 468	Organizational Development	B+	3.5	9	9												
HRM 341	Labor Relations	A	4	3	12	GOC 401	Corporate Skills	B+	3.5	9	9	MIS 471	Change Management	B+	3.5	9	9	MGT 463	Corporate Skills	B+	3.5	9	9	MRA 469	Human Resource Research Methods	B+	3.5	9	9	MRA 468	Organizational Development	B+	3.5	9	9												
HRM 340	Research Methods & Techniques	B+	3.5	9	12.5	GOC 402	Human Resource Research Methods	B+	3.5	9	9	MIS 472	Strategic Management	B	3	9	9	MIS 467	Change Management	B+	3.5	9	9	MIS 469	Human Resource Research Methods	B+	3.5	9	9	MIS 468	Organizational Development	B+	3.5	9	9												
HRM 343	Theories of Globalization	B+	3.5	9	12.5	GPA : 3.6 CGPA: 3.43	GPA : 3.6 CGPA: 3.43	GPA : 3.7 CGPA: 3.35	GPA : 3.6 CGPA: 3.35	GPA : 3.7 CGPA: 3.35																																					
Thesis/Internship/PCSP							Spring Semester 2022																																								
Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.	Course Code	Title	Grade	Grade Point	Credit Hours	Prod.																								
CSE 317	Community Support Program Completed on 04 January	A	<	0	0	GOC 403	Advanced Application of IT in Business	B+	3.5	9	9	HIS 481	Strategic Management	B+	3.5	9	9	MIS 467	Change Management	B+	3.5	9	9	MIS 469	Human Resource Research Methods	B+	3.5	9	9	MIS 468	Organizational Development	B+	3.5	9	9												
SEW 193	Workshop Completed on 31 May 2021	A	<	0	0	GPA : 3.00 CGPA: 3.43	GPA : 3.00 CGPA: 3.43	GPA : 3.7 CGPA: 3.35	GPA : 3.6 CGPA: 3.35	GPA : 3.7 CGPA: 3.35																																					

144 Credit hours Completed.
* The Program consists of 144 credit hours, duration 4 years.

Program completion date: 5 August 2021

Controller of Examinations

Date: 16 September 2021

PROPOSED

Draft - UG Program

GENERAL INFORMATION**Bahria University Charter Date**

07 February 2000

HEC NOC Date for MS/ MPhil/ PhD Programs

N/A

Basic Admission Requirement for the Program

Intermediate or its equivalent with a minimum of 50% marks in any discipline

Previous Degree Held by the Student

HSSC COMMERCE from KARACHI BOARD

Academic Honors

Students achieving high standards are awarded following honors upon completion of their degree requirements:

- Summa Cum Laude ≥ 3.90
- Magna Cum Laude ≥ 3.80 To < 3.90
- Cum Laude ≥ 3.60 To < 3.80

Honors designations are indicated on the transcript.

Criteria for Award of Academic Honors

The student should have been regular in the entire degree program and should have taken full load in all semesters as per road map of degree program.

Ineligibility for Academic Honors

- Any course withdrawn or dropped.
- Any semester frozen.
- Repetition of any course.
- Any 'F' or 'W' grade awarded in any Course.
- Credit Hours Transferred.
- Any of degree requirements not completed within the roadmap time frame.
- Has never been penalized in any disciplinary case at the University.

Prepared by : _____
Checked by _____
Asst Controller Exams : _____
Date : 16 July 2021

Grading System

Following grading system (absolute) is used at Bahria University:

Letter Grade	Percentage	Grade Point
A	$\geq 85 - < 100$	4
A-	$\geq 80 - < 85$	3.67
B+	$\geq 75 - < 80$	3.33
B	$\geq 71 - < 75$	3
B-	$\geq 68 - < 71$	2.67
C+	$\geq 64 - < 68$	2.33
C	$\geq 60 - < 64$	2
C-	$\geq 57 - < 60$	1.67
D+	$\geq 53 - < 57$	1.33
D	$\geq 50 - < 53$	1
F	Below 50	0
W	-	Withdrawn

Medium of Teaching

English is the medium of teaching for all programs conducted at Bahria University.

Transcripts

Following types of transcript are issued to the students at Bahria University:

a. Final Transcript

Final transcript will be issued when all the degree requirements have been completed.

b. Interim Transcript

It is issued at the end of each semester (except final semester). Program incomplete is depicted on interim transcript.

Authentication

Final transcripts are light beige in colour. They bear embossed University seal, security water markings & Controller of Examinations signature on its face (Alteration and/or forgery of this document is a criminal offense liable to be tried in the Court of Law).

Procedure for Final TranscriptProcedure to apply for transcripts is given on Bahria University website www.bahria.edu.pk

RATIFICATION IN BU ADMISSION POLICY 2021 (CLAUSE 6.2)

6.2 Selection, Admission & Registration Procedure: Every candidate shall undergo following process:

- a. The candidate shall having satisfied him/herself will appear in BU Entry Test / GAT (General) test as applicable.
- b. Admission Test Merit List shall be prepared by Admission Directorate in coordination with IT Directorate.
- c. Admission Test Merit List shall be submitted for Rector's approval.
- d. Director Campuses shall forward **Admission Test Merit List** to concerned HODs for making candidates interview list which shall be displayed on websites along with date and time of the interview.
- e. **An Admission Committee shall be constituted by the Respective Campuses/CUs: names and interviews' schedule are to be forwarded to the Admissions Dte.** The Admission Committee shall interview the eligible applicants and evaluate their suitability for the MS/MPhil program. Any further selection procedure, including test, may also be used to assess the suitability of the candidates. During the interview, original documents shall be thoroughly checked and further eligibility requirements shall be validated by Admission Committee and Admission office of respective campuses.
- f. Pre-requisite / deficiency courses are to be assigned by the Admission Committee of each department as per the approved roadmap of the concerned program.
- g. After interview, a **Provisional Merit List** (including 30% marks of interview) shall be prepared by HoD concerned and forwarded to the Director Admission through Director Campus for soliciting Rector's Approval; Annex 'J'. **Meanwhile, the CUs issue provisional admission challan form to the candidates for submission of admission fee.**
- h. Submission of fee by candidates in designated bank.
- i. After approval of Rector, Director Admissions will forward **Final Merit List** to Director Campus for confirmation of admission.
- j. Manager (Accounts) shall generate final list of candidates who submitted fee for the program. **Full reimbursement is to be made to those candidates who were issued fee challans but their names do not appear in the Final Merit List.**
- k. Final list of candidates is further verified and validated by the department with original merit list.
- l. DD Academics's office of respective campuses shall generate list of candidates with enrollment numbers for registration purpose and shall forward it to concerned HoD.
- m. Concerned Student's Advisor registers candidates in the first semester.
- n. Upon final selection of students in each program, respective HODs shall forward list of candidates (Consolidated) to Director Admissions and Director (PGP) through Director Campus within 05 days of start of semester.

AMENDMENTS IN BU ACADEMIC RULES CHAPTER 3

1. Existing Table 3 (Faculty Course Load) may be amended as follows:

Table 3: Faculty Course Load

Category	Course Load
Engineering Sciences courses	All Faculty Members: 9-12 contact hours Lab Engineers: 12-15 contact hours
All other courses	Professor: 2-3 courses/ 6-9 credit hours Associate Professor: 2-3 courses/ 6-9 credit hours Assistant Professor: 3-4 courses/ 9-12 credit hours Lecturer: 4 courses/ 12 credit hours
Deans	1 course/ 3 credit hours
Principals	1 course/ 3 credit hours
Head of Departments	1 course/ 3 credit hours
Advisors Student Affairs	1 course/ 3 credit hours
Faculty Members performing authorized additional duties as defined in clause 3.19.3	As per BUHR Policy

2. New Clause 3.19.2 may be added as follows:

3.19.2 Allocation of exact course load for faculty designations with an option (2/3 or 3/4 courses) would have to be processed by the Principal of respective School (through DG CU) for approval of the Rector (through Academics Directorate), at least one month before the commencement of related semester, based on the following:

- a. Professor/ Associate Professor shall normally teach 3 courses in a Semester Assigning 2 courses in a Semester to a Professor/ Associate Professor shall be fully justified (e.g. extra- ordinary research output, funded projects, etc) with prior approval by the Rector.
- b. Assistant Professor shall normally teach 4 courses in a Semester Assigning 3 courses in a Semester to Assistant Professor shall be fully justified (e.g. extra- ordinary research output, funded projects, etc) with prior approval by the Rector.

3. Number of existing clause 3.19.2 may be amended as 3.19.3 and replace as follows:

3.19.3 The authorized ‘additional duties’ referred to in the previous clause shall be as follows; criteria and respective waiver covered in BU HR Policy:

- a. Associate Dean.
- b. Cluster Head.
- c. Dean Coordinator.
- d. Accreditation Coordinator.
- e. Internship & Placement Coordinator.
- f. Thesis/ Final Year Project Coordinator.
- g. Evening Programme Coordinator.
- h. Weekend Programme Coordinator.

- i. Postgraduate Programmes Coordinator.
 - j. Head of Research Centre.
 - k. Principal Initiator Project.
 - l. HEC Funded Project.
 - m. Journal Editor.
4. New Clause 3.19.4 may be added as follows:
- 3.19.4 In case a faculty member is eligible for course load waiver due to admin position(s) which is less than the standard course load defined in Table 3 above, at least one course load will have to be undertaken by him/her in each semester.
5. Number of existing clauses 3.19.3 & 3.19.4 may be amended as 3.19.5 and 3.19.6 respectively.

AMENDMENTS IN BU HR POLICY CHAPTER-IX (WORKLOAD POLICY)

1. Replace existing clause 0908 with following:

0908. Faculty members who are given administrative assignment within their respective Department to perform as additional work shall receive reduction in their teaching load; excluding the faculty members appointed on full time billets at BUHO/ CU. Any administrative assignment can be included into the Course Load Reduction category through a notification by the Competent Authority – processed by respective Department through BUHO/ HR Dte and notified by DHR – specifying number of teaching credit hours remitted against that assignment; followed by related amendment in BU HR Policy (Workload Policy). Administrative assignments in the BU commonly listed under this category are tabulated below, while the criteria for these is covered in Annex S of this Policy.

Notified Admin Assignments	No. of Credit Hours Remitted
Dean, Associate Dean, Principal, HoD, ASA	09 credit hours
Cluster Head	03 / 06 credit hours*
Dean Coordinator	03 / 06 credit hours*
Accreditation Coordinator	03 credit hours
Internship & Placement Coordinator	03 / 06 credit hours*
Thesis/ Final Year Project Coordinator	03 / 06 credit hours*
Evening Programme Coordinator	03 credit hours
Weekend Programme Coordinator	03 credit hours
Postgraduate Programmes Coordinator	03 / 06 credit hours*

* As per criteria at Annex S of this Policy

2. Add Annex S to BU HR Policy as follows:

Criteria for Course Load Reduction to Faculty Admin Assignments

Following criteria is to be followed for course load reduction to a particular admin assignment:

Dean. One course load teaching to be undertaken, i.e. 2 x course load reduction to Dean Engineering Sciences, while 3 x course load reduction to other Deans (except Dean Health Sciences).

Associate Dean. One course load teaching to be undertaken, i.e. 2 x course load reduction to Dean Engineering Sciences, while 3 x course load reduction to other Deans (except Associate Dean Health Sciences).

Principal. One course load teaching to be undertaken, i.e. 2 x course load reduction to Principal Bahria School of Engineering & Applied Sciences, while 3 x course load reduction to other Principals (except Principals of Health Sciences institutions).

Head of Department. One course load teaching to be undertaken, i.e. 2 x course load reduction to the HODs of Engineering Sciences, while 3 x course load reduction to other HODs (except of Health Sciences).

Advisor Students Affairs. One course load teaching to be undertaken, i.e. 2 x course load reduction to ASAs of Engineering Sciences, while 3 x course load reduction to other ASAs.

Cluster Head

- a. No *Cluster Head* should be appointed for a Programme with only 1 x Section intake per year, or where the number of courses offered for related Stream/ Programme are equal to/ less than 50 per semester.
- b. A *Cluster Head* may be appointed with 1 x course load reduction for a Stream/ Programme with more than 1 x Section intake per year, or where the number of courses offered for related Stream/ Programme are more than 50 per semester.
- c. A *Cluster Head* may be given 2 x course load reduction in case the number of courses offered for related Stream/ Programme are more than 75 per semester.

Dean Coordinator. Two course load teaching to be undertaken, i.e. 1 x course load reduction to Dean Coordinator for Engineering Sciences, while 2 x course load reduction to other Dean Coordinators.

Accreditation Coordinator. One per Department with 1 x course load reduction in only those Departments which fall under any Accreditation Body.

Internship & Placement Coordinator. One per Department with 1 x course load reduction. Where the number of students exceeds 500, the Coordinator may either be given 2 x course load reduction or 2 x *Internship & Placement Coordinator* may be appointed with 1 x course load reduction each (in case of different Programmes only).

Thesis/ Final Year Project Coordinator. One per Department with 1 x course load reduction for Undergraduate and MBA Programmes. Where the number of students exceeds 500, the Coordinator may either be given 2 x course load reduction or 2 x *Thesis/ FYP Coordinator* may be appointed with 1 x course load reduction each (in case of different Programmes only).

Evening Programme Coordinator. One per Department with 1 x course load reduction, where the Evening Programme is being offered.

Weekend Programme Coordinator. One per Department with 1 x course load reduction, where the Weekend Programme is being offered.

Postgraduate Programme Coordinator. One per Department with 1 x course load reduction, where PhD or both PhD & MS/ MPhil Programmes are offered. Where the number of students exceeds 500, the Coordinator may be given 2 x course load reduction.

I/C Psychology Clinics.

- a. Well Being Centre, BUIC - 3 x course load reduction, with *Internship & Placement* coordination.
- b. Umeed-e-Nau, IPP - 2 x course load reduction, with *Internship & Placement* coordination.
- c. Umeed-e-Nau, BUMDC – 2 x course load reduction, with *Internship & Placement* coordination.

SOP FOR OUTBOUND EXCHANGE STUDENTS FOR UNIVERSITY OF ALMERIA, SPAIN

a) Based on the maximum provision of students to be sent in an academic year, as permitted by University of Almeria, Spain, there shall be students selected from each campus of Bahria University including, Islamabad, Karachi & Lahore, to go on the exchange program to University of Almeria, Spain. The maximum number of students that can be recommended by any Campus would be based on the percentage of number of relevant students at that Campus. In case suitable candidate(s) are not available in a campus, the seat may be transferred to the other campus.

b) The recommendation of students is to be made by the following authorities:

<u>CAMPUSES</u>	<u>Nominating Authority</u>
• BUIC	Director Campus Islamabad
• BUKC	Director Campus Karachi
• IPP	Dean/Director Professional Psychology
• BULC	Director Campus Lahore

c) The above authorities will interview and shortlist students from their respective campuses based on following selection criteria, which should reflect the highest quality of students:

Selection Criteria:

- i. The students must be a regular student of Bahria University taking full course load.
- ii. The minimum CGPA of the student should be 3.0.
- iii. The student must have studied for more than a year (2 semesters) with Bahria University. Students in 2nd semester will be eligible to apply.
- iv. The student must be proficient in English and have good communication skills.
- v. The student must not have any disciplinary cases against them and should be void of any attitude problem.

d) The shortlisted students will be re-evaluated by a following member committee at Bahria University to shortlist students for final approval of Rector:

i.	Pro-Rector (Academics)	-	Chairperson
ii.	Registrar	-	Member
iii.	Director Academics	-	Member
iv.	Director Admissions	-	Member
v.	Controller of Examinations	-	Member
vi.	Director Students Affairs	-	Member
vii.	Director International Office	-	Member

e) The selected students must sign a written bond with Bahria University to return to Pakistan to continue their remaining studies with Bahria University or to complete remaining degree requirements.

f) The responsibility of accommodation arrangement in Spain, during the course of stay, will be on student. The International office will assist the selected students in finding suitable accommodation. In addition to the expenses pertaining to accommodation, students will also be responsible for travelling & visa/pass expenses, medical/health insurance or any additional service charges they wish to avail or are required for travel to Spain for exchange programme.

- g) The student will defer their semester prior going to University of Almeria, Spain, under the Exchange Programme. There shall be no tuition fee charged for this process. The decision on duration & number of semesters, to defer, is to be taken by the relevant Head of Department according to number of days the student will spend at University of Almeria, Spain, under exchange program. The student must adhere to departure and return dates as specified by his/her department.
- h) The duration of the semester(s) studied abroad will not be counted towards the calculation of time bar.

Eligibility for Honors & Awards:

- i) Students availing the exchange programme at the University of Almeria, Spain, will be eligible for academic honors & awards, as long as they are taking full semester loads in their studies at Bahria University and finishing remaining degree requirement with their batch of registration.
- j) If, as a result of the exchange activity, any of their courses are affected, these students would be permitted to make up for the shortfall (of the affected courses only) on return to Bahria University either during the summer sessions, if offered, or during succeeding regular semester, in excess to their regular course load.
- k) If during the summer session,
 - i. the students take shortfall courses, they will be awarded actual grades and no capping will apply.
 - ii. the students take any course, which were not affected by the exchange programme, summer session rules will apply and the students will become ineligible for Honors & Awards.

Transfer of Credits as a result of an Outbound Exchange Program:

- l) Student interested in registering for the courses at University of Almeria, Spain, for which they can avail **credits transfer** at Bahria University, shall be properly advised by the relevant Head of Department about the compatibility of the courses they wish to take, based on the course content, before departure.
- m) The student must inform their Head of Department about the possible courses they wish to take at University of Almeria, Spain, along with the course outline. A preliminary meeting of the Equivalence Committee should take place, before the departure of student. The committee shall give clear instructions to the student, in writing, on a prescribed form (attached), on the course(s) he/she can take to avail **credits transfer**, against course(s) of similar nature, at Bahria University as per the road map of the program he/she is studying.
- n) The final decision on **credits transfer** is to be taken, on return of the student, and successful completion of the courses, as per following criteria:
 - i. Students applying for **credits transfer** are to submit original interim transcript and the course outlines of the course(s) studied at University of Almeria, Spain, to their relevant Head of Department (HOD) on return. The HOD will then formulate an Equivalence Committee to make final recommendations to their relevant Director of Institute. The Director will then forward recommendation of the Equivalence Committee to Director

- International Office for processing case for final approval. There shall be no fee charged from the student for ***credits transfer***.
- ii. ***Credits transfer*** of courses will only be allowed for Degree level programs (*equivalent to similar level program at Bahria University*) offered on campus.
 - iii. ***Credits transfer*** for only those courses will be allowed for which a course with at least similar standard, credit hours and matching description is available in the relevant academic program of Bahria University. As the marking criteria at University of Almeria, Spain, is different from what is followed at Bahria University, therefore following grade mapping mechanism is to be followed:

	University of Almeria, Spain		Bahria (Old System)	University Grading	Bahria (New System)	University Grading
	Grade	Marks	Grade	GP	Grade	GP
a	A	Magna Cum Laude (≥ 9 and ≤ 10)	A	4.0	A	4.0
b	B	≥ 9 and ≤ 10			A-	3.67
c	C	≥ 8 and < 9	B+	3.5	B+	3.33
d	C	≥ 7 and < 8	B	3.0	B	3.0
e	D	≥ 6.5 and < 7	C+	2.5	C+	2.33
f	D	≥ 6.0 and < 6.5	C	2.0	C	2.0
g	E	≥ 5.5 and < 6	D	1.5	C-	1.67
h	E	≥ 5.0 and < 5.5			D+	1.33
i	F	Fail (<5)	F	0.0	F	0.0

* Due to lesser number of grades at University of Almeria, Grade B-&D (new Grading system) of BU have been excluded

** For postgraduate students, BU equivalent grade C- and below will be converted into an F grade

- iv. The courses must equate in description and laboratory work, if any, with the similar course of the relevant academic program of Bahria University.
- v. ***Credits transfer*** of courses equating to maximum of 50% of the total credit hours of the relevant academic program of Bahria University will be allowed.

SOP FOR INBOUND EXCHANGE STUDENTS FROM UNIVERSITY OF ALMERIA, SPAIN,

- a) Bahria University will accept students from University of Almeria, Spain, under the exchange program in any given academic year. The maximum number of students to be accepted will be decided for each department in consultation with the Dean and relevant HoD.
- b) Only students recommended by the International office of University of Almeria, Spain, will be entertained under this arrangement.
- c) The inbound students from University of Almeria, Spain, will be advised on the availability of courses, which they want to take at Bahria University, after consultation with the HOD of the relevant department. The HOD must ensure that there are no clashes between the selected courses by the individual.
- d) The student will be responsible for own accommodation arrangement in Pakistan, but the International office of BU will assist in finding suitable accommodation.

- e) There shall be no tuition fee charged by Bahria University from students of University of Almeria, Spain, under student's Exchange program.
- f) On successful completion of the course work at Bahria University, the student will be responsible to meet the ***credits transfer*** requirements of University of Almeria, Spain, as per its own policy. Bahria University will only award official interim transcript to the student for courses he / she has studied at Bahria University.