

**Minutes
of
34th Meeting of Academic Council
held on
Wed 13th & Thu 14th Nov 2019
Through VLC**



Directorate of Academics

Bahria University Islamabad

Reference Designators & Terms used in this Document

These designators/terms are meant to introduce clarity, standardisation 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 oonn

New Item 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 o₂o₂(oonn)

Previous Item 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'.

Appendage on o₃o₃(oonn)

Previous Item Example: Appendage 32 (3028) means appendage attached on Item 28 of 30th ACM during 32nd ACM.

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.

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

Acronyms & Abbreviations used in this Document

ACCSB	Association to Advanced Collegiate School of Business
BUAR	Bahria University Academic Rules
BUMDC	Bahria University Medical & Dental College
BUCPT	Bahria University College of Physical Therapy
CH	Credit Hour(s)
CCH	Course Codes Handbook
CE	Computer Engineering
CS	Computer Sciences
CSE	Computer & Software Engineering
DIC	Director Islamabad Campus
DIPP	Director IPP
DKC	Director Karachi Campus
DLC	Director Lahore Campus
DNIMA	Director National Institute of Maritime Affairs
DMPRC	Director MPRC (Karachi)
DS	Dental Section BUMDC
EDC	Estimated Date of Completion
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
HSS	Humanities & Social Sciences
iaw	in accordance with
ie	that is
IR	International Relations
MSS	Management & Social Sciences
MS	Management Sciences
NBEAC	National Business Education Accreditation Council
PMDC	Pakistan Medical & Dental Council
PNC	Pakistan Nursing Council
PNNC	Pakistan Navy Nursing College
PNMTS	Pakistan Navy Medical Training School
PFM	Permanent Faculty Member
PEO	Program Educational Objective
PH	Public Health
QAL	Quranic Arabic Language
SE	Software Engineering
SHB	Student Handbook
SCM	Supply Chain Management
T&N	Telecom & Networking
URD	User Requirements Document
VFM	Visiting Faculty Member
wef	with effect from

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Attendance**BUHO****Present**

1. Rear Admiral Habib Ur Rehman HI(M)	Rector	In Chair
2. Surg Rear Adm (R) Najm Us Saqib Khan HI(M), T.Bt	DG (HS)	Member
3. Cdre (R) Muhammad Hisham SI(M)	Registrar	Member
4. Prof Dr M Najam ul Islam	Dean (ES)	Member
5. Senior Asst Professor Zahid Majeed	Dir Academics	Member & Secy
6. Cdre (R) Asim Raza SI(M)	Dir Examinations	Member
7. Cdre (R) M Mateen Ur Rehman SI(M)	Dir Admissions	Member
8. Surg Cdr (R) Hamidullah Arif PN	Dir Health Sciences	Member
9. Prof Dr Shehzad Khalid	Dir R&D/ORIC	Member
10. Senior Associate Professor Mr Fazal Wahab	Dir DQA	Member
11. Associate Prof Dr Riaz Ahmed	Dir PGP	Member

In Attendance

12. Cdre (R) Muhammad Aslam Khan SI(M)	Dir Finance
13. Capt (R) Ahmad Farooq Butt PN	Dir HR
14. Dr Habib ur Rehman	Dir CIS
15. Ms. Sundal Mufti	Dir Student Affairs
16. Dr. Asim A Awan	Dir Marketing
17. Senior Assistant Prof Mr Rizwan Aamir	Dir IT
18. Senior Assistant Prof Mr M Awais Mehmood	Dir IO
19. Capt (R) Munawwar Ahmad PN	Dy. Registrar (A & C)
20. Capt (R) Azhar Iqbal PN	Dy. Registrar (Academics)
21. Cdr Amer Abdullah PN	Dy Director Academics

BUIC**Present**

22. Rear Adm (R) Nasir Mahmood HI(M)	DG BUIC	Member
23. Cdre (R) Asif Majeed Butt	Director	Member
24. Senior Prof Dr Tehseen Ullah Khan	HOD(EES)	Member
25. Senior Prof Dr Syed Abdul Siraj	HOD(Media Studies)	Member
26. Prof. Dr Muhammad Arif Khattak	HOD(MS)	Member
27. Associate Prof. Dr Muhammad Ali Saeed	HOD(BS)	Member
28. Associate Prof Muhammad Muzammal	HOD(CS)	Member
29. Associate Prof Dr Awais Majeed	HOD(SE)	Member
30. Senior Assistant Prof Dr Muhammad Umar Hayat	HOD(HSS)	Member
31. Senior Assistant Prof Dr. Khalid Javed	HOD(CE)	Member
32. Senior Assistant Prof Ms Malieka Farah Deeba	HOD(LAW)	Member
33. Senior Assistant Prof Dr Junaid Imtiaz	Ag HOD(EE)	Member
34. Lecturer Shazia Yusuf	Ag HOD(PP)	Member

In Attendance

35. Sobia Shujaat	DD(QA)
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BUKC**Present**

36. Rear Adm (R) Mukhtar Khan HI(M)	DG BUKC	Member
37. Cdre (R) Muzammil Hussain SI(M), SE	Director	Member
38. Senior Prof Dr Farooq-e-Azam Cheema	Dean MSS	Member
39. Prof Dr Bashir Ahmad	HOD (MS)	Member
40. Dr. Asif Inam	HOD (Maritime Sciences)	Member
41. Dr. Syed Shahid	HOD (EES)	Member
42. Prof Dr Haroon Ur Rasheed	HOD(EE)	Member
43. Dr. Talat Sharafat Rehmani	HOD (HSS)	Member

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44.	Associate Prof Dr Sohaib Ahmed	HOD(SE)	Member
45.	Senior Asstt Prof Dr Syed Safdar Rizvi	HOD(CS)	Member
46.	Senior Asstt Prof Dr Rizwan Iqbal	HOD (CE)	Member
47.	Senior Lecturer Mahe Darakhshan	HOD(Media Studies)	Member

In Attendance

48.	Captain Zaheer Ahmad PN	DD (Academics)
49.	Cdr (R) Syed Nadeem Hasan Shah PN	DD (Examinations)
50.	Cdr (R) Imran Ishtiaq Qureshi PN	DD (Admissions)
51.	Saqib Shibli	DD (Marketing)
52.	Ms. Erum Shafiq	AD (QA)
53.	Arif Ansari	Manager IT
54.	Syed Rizwan Ali	Manager BIC
55.	Atif Nazeer	Asst Manager LDC
56.	Dr. Rashida Qari	Prof (Maritime Department)
57.	Dr. Mehrab Khan	Prof (EES Department)
58.	Cdr Sidra Faisal PN	TCO PNSL

BULC

Present

59.	Cdre (R) Shahid Azmat Wain SI(M)	Director	Member
60.	Associate Prof Dr Urooj Sadiq	HOD (PP)	Member
61.	Senior Asstt Prof Mr Farhan Saeed Sherazi	HOD(CS&IT)	Member
62.	Assistant Prof Dr Muhammad Ahmad	HOD(MS)	Member

BUMDC

Present

63.	Rear Adm (R) Imtiaz Ahmad HI(M)	DG BUMDC	Member
64.	Prof Dr Asadullah Khan	Dean HS/Principal	Member
65.	Prof Dr Shakeel Ahmed	HOD (Pediatrics)	Member
66.	Prof Dr Naheed Sultan	HOD(Surgery)	Member
67.	Prof Dr Nasim Karim	HOD(Pharmacology)	Member
68.	Prof Dr Iqbal Hussain Udaipurwala	HOD(ENT)	Member
69.	Prof Dr Khalida Nasreen Abdullah TI(M)	HOD(Obst and Gynae)	Member
70.	Prof Dr Sameer Shahid Ameen	HOD (Eye)	Member
71.	Prof Dr Inayat Hussain Thaver	HOD (CHS)	Member
72.	Prof Dr Wahab Bukh Kadri	Principal (DS)	Member
73.	Dr Kulsoom Fatima	Vice Principal (DS)	Member
74.	Dr Syed Ahmed Umar	HOD (Dental Material)	Member
75.	Dr. Daud Mirza	HOD (Oral Pathology)	Member
76.	Dr Beenish Alam	HOD (Oral Biology)	Member
77.	Dr. Tabssum A Qadeer	HOD (Orthodontics)	Member
78.	Senior Associate Prof Dr Khalid Aziz	Vice Principal (DPT)	Member
79.	Lt Cdr Maryam Behram	Principal PNNC	Member

In Attendance

80.	Brig (R) Dr Imdad Ali	OI/C Examinations
81.	Brig Shahid Ali Khan	Clinical Coordinator
82.	Dr Iram Saddiq	Prof of Physiology
83.	Najm Us Sahar Ilyas	Lecturer Islamic Studies (DPT)

IPP

Present

84.	Prof Dr Zainab F. Zadeh	Dean/Director	Member
85.	Senior Associate Prof Dr Zainab Hussain Bhutto	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 10:00 hrs with recitation from the Holy Quran and continued till 1700 hrs on 13th & 14th Nov 2019. The meeting recessed for lunch and prayer at 13:00 hrs and resumed proceedings at 1415 hrs on both days.
2. In his opening remarks, the Chair thanked the participants and prayed to Almighty Allah and begged from Him to give wisdom and strength to this Council to make right decisions. He also stressed the importance for participation in the proceedings while staying focused and avoiding lengthy discussion.

Confirmation of the Minutes of the 33rd ACM held on 2 & 3 May 2019

3. The Secretary apprised the Council that:
 - a. Draft minutes of the 33rd ACM were communicated to all members and non-member participants; on 21st May 2019 for comments. No comment or observation was received.
 - b. Consequently, the draft minutes were processed on file for approval of Honorable Rector and subsequently approved minutes were disseminated to all concerned on 30th May 2019 through email.
4. The Minutes of 33rd ACM were tabled for confirmation. All members of ACM on the VLC endorsed the minutes upon which the Council confirmed the minutes.

Review Items

Item 2009: Indigenous PG Programs (MPhil & PhD) in Basic Health Sciences at BUMDC, Commencement of

Responsibility: DG BUMDC

Decision of the 33rd ACM

5. Chair showed satisfaction on the progress. Upon suggestion of Registrar, the Council resolved that BUMDC is to write a Concept Paper covering the following:
 - a. Establishment of Post-Graduate College under the umbrella of BUMDC.
 - b. Vision of Post-Graduate College at BUMDC.
 - c. Career progression of the faculty at BUMDC.
 - d. Study to be carried out for utilization of existing PhD Faculty of PNS SHIFA.
6. Detailed concept paper explaining above mentioned topics be presented in next ACM. Progress on other points like establishment of Animal House at BUMDC and PG Programs etc also be viewed.
7. Point to remain on agenda and progress be reported.

Progress Reported

8. **Establishment of Animal House.** Tender was floated. Only one firm participated and submitted the proposal. Later on, due to price escalation in market this firm is reluctant, and the case may have to be retendered.
9. **PG Programs of BUMDC.** MPhil Thesis defense of Batch -1(2017-19) will be completed in Sep to Oct while Batch - 2 (2018-20) will defend synopsis in Sep-Oct and classes for Batch-3 will commence from 12th Sep 2019. Physiology and Biochemistry programs case is pending with PMDC.
10. Dean HS will present the concept paper under the guideline given at para 5 a, b, c & d above.

Discussion

11. Non availability of Animal House despite approval since last year was viewed with concern by the ACM as the same may result in closing of PG Programs during next visit of PMDC/PMC officials. Subsequently background of the Concept Paper regarding Post Graduate College was explained by the Registrar in the context of upcoming MPhil and PhD Programs.

Decision 34(2009)

12. After discussion, following were decided:
 - a. The Concept Paper be forwarded formally for evaluation/processing at BUHO prior consideration for approval.
 - b. Establishment of Animal House & PG Programs of BUMDC be retendered.

- c. Point to remain on agenda and progress to be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean HS	DG BUMDC
Statutory Documents affected:	-	

Item 2234: BULC Admission Criteria of Programs - Progress Report

Responsibility: Director BULC

Decision of the 33rd ACM

13. After discussion, it was decided that waiver in admission criteria to continue for the time being. However, the same will be reviewed in next ACM for further extension of waiver or otherwise after Fall-2019.

- 14. Point to remain on agenda and progress be reported.

Progress Reported

15. 9% Students have availed 5% waiver in admission criteria of BS (Psychology) in Fall-2019.

Discussion

16. Rector enquired the number of students availing the waiver. It was apprised that 05 students had availed. It was further deliberated that fee structure of BU needs to be evaluated w.r.t attracting large number of students during forthcoming intakes. Subsequently, the members supported continuation of provision of 5% waiver as already being practiced.

Decision 34(2234)

17. After discussion, the Council resolved that:

- a. Status quo w.r.t continuation of existing admission criteria be maintained.
- b. Study Report regarding fee structure along with recommendations be forwarded to BUHO separately after comparison of fee structure of other HEIs at Lahore before next ACM.
- c. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director BULC	Director BULC
Statutory Documents affected:	-	

Item 2334: BBA and MBA Programs - Heuristic and Flipped Classroom methods of Teaching and Evaluation

Responsibility: Director LDC

Decision of the 33rd ACM

18. After detailed deliberation, the Council resolved the following:

- a. Initially, two class rooms at each Campus (BUIC, BUKC & BULC) be prepared for flipped classroom, whereas, BUIC and BUKC should have the facilities of smart class rooms (lecture recording, IT support including hardware/software and Learning Management System) as a pilot project within six months.
- b. LDC is to conduct training on flipped class teaching method for suitable number of faculty at all campuses (BUIC, BUKC & BULC) during summer semester/semester break.
- c. Dean MSS is to work out and scrutinize the programs/courses to be taught through flipped class room method. Accordingly, paper setting and assessment/examination methodology be also proposed and processed on file for approval of Competent Authority.
- d. Learning Management System is to be developed and implemented by Fall-2019.
- e. LDC is to arrange refresher training on teaching methodologies during summer semester/semester break preferably for entire faculty. However, it should be compulsory for all Lecturers and Assistant Professors in all Campuses including BUMDC.

19. Point to remain on agenda and progress be reported.

Progress Reported

By Director LDC

20. Flipped classroom teaching method was covered in workshop on 'Training of Teachers' (TOT) of 02 days duration, conducted by Director LDC at BUIC/LC/KC in Aug-Sep 2019. The TOT is a refresher training program for the faculty members, the first cycle of which has been run in summer 2019. This would be an ongoing program in order to pass all faculty members through the TOT.

By Director IT

21. Learning Management System (1st version catering AACSB requirements) has been developed and being deployed for Bahria Business School Islamabad initially as a pilot project. The same will be deployed for other departments and CUs afterwards.

Discussion

22. Upon reviewing the progress reported, it was observed that a lot of efforts are still required for implementation of the flipped class room method despite hectic pursuance since 2016. Director IT informed the Council that Learning Management System (LMS) has been developed for Business Studies Department and integrated with CMS. Faculty and students can use it from their respective CMS portal. HoD Business Studies confirmed that LMS is available with the faculty and is being tested. Development of Learning Management System by IT department was appreciated by the Chair. Registrar emphasized that while requisite infrastructure is gradually being made available, the complete synchronization of Learning Management System, IT support and lecture recording needs to be achieved in early timeframe. Moreover, campuses are to assess the profitability in

this regard and Deans Committee headed by DG BUKC be constituted to overview subject methods of teaching.

Decision 34(2334)

23. After prolong deliberation, the Council decided that:

- a. Before next ACM, a complete roadmap for implementation of Heuristic and Flipped Classroom method of teaching and education along with incorporation of assessment/examination methodology, Learning Management System, IT support and lecture recording system be forwarded to BUHO through Deans Committee headed by DG BUKC.
- b. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Registrar - For notification of Committee All Deans	DG BUKC
Statutory Documents affected:		-

Item 2432: MS Supply Chain Management at BUKC - Progress

Item 2619: MS in HRM & Organizational Psychology at BUKC - Progress

Responsibility: Dean MSS

Decision of the 33rd ACM

24. The Council resolved the following:

- a. At least two Ph.D. faculty members should be hired for MS (SCM) before submission of case to HEC for NOC.
- b. MS (HRM & Organization Psychology) at BUKC be pursued with HEC for NOC.
- c. Launch of MS (Risk Management) Program is abandoned.
- d. All DGs/Director Campuses/HODs to ensure meeting HEC minimum criteria for running MS/MPhil and PhD Programs in their Campuses/Departments.

25. Item # 2620 dropped whereas, Item # (2432 & 2619) are to remain on agenda and progress be reported.

Progress Reported

26. Item No. 2432

- a. Case for NOC to launch MS (SCM) Program at BUKC is lying with HEC. According to HEC guidelines, 2 PhDs in the relevant discipline are supposed to be the part of MS Faculty.
- b. BUKC is looking for suitable PhD faculty members, however, so far success has not been achieved; 02 candidates were interviewed last month but their specialization was not found relevant.
- c. PhD in SCM is a rare qualification at the moment, however, BUKC is trying to look into some relevancy; if not in degree title then at least should have some relevance in publications.

27. **Item No. 2619.** After fulfilling HEC requirement i.e. the provision of transcripts and pictures of PhD faculty, case for NOC to launch MS HRM & Organizational Psychology) Program at BUKC has been forwarded to HEC.

28. As decided in ACM, BUKC will ask BUHO to pursue the case only when suitable faculty will be available.

Discussion

29. Non availability of dedicated FM in the field of SCM was highlighted whereas, cost involved in hiring the suitable FM for HRM & Organizational Psychology was also pointed out.

Decision 34(2432 & 2619)

30. Hunting for the relevant two PhD Faculty members in the field of Supply Chain Management be continued. Both items to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director BUKC Director HR HOD (MS) BUKC	Dean MSS DQA(wrt Item # 2619)
Statutory Documents affected:	-	

Item 2449: BUMDC Plan of Dental College Building - Progress Report

Responsibility: DG BUMDC

Decision of the 33rd ACM

31. DG BUMDC to prepare detailed Phase-wise Plan of the Dental College building on priority to forward to NHQ and present it in next BOG meeting.

32. Point to remain on agenda and progress be reported.

Progress Reported

33. On 20th August 2019 preliminary architectural drawings of the floor plans for Dental, PNNC, PNMDS, BUCPT and Allied Health Sciences were received as per URD. However, it has been learnt lately that PNMDS will not be constructed on the subject land under consideration for allocation, so a new site plan is to be made. Consultant has been requested for a meeting at the earliest convenience.

Decision 34(2449)

34. After discussion, the Council decided to drop the point from this forum as the same point is now on BOG agenda.

35. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean HS Principal Dental College	DG BUMDC
Statutory Documents affected:	-	

Item 2643: Grooming Students, Framework for

Responsibility: Director LDC

Decision of the 33rd ACM

36. The Chair directed all Campuses to make concerted efforts to complete the planned series of lectures. If any lecture is postponed, alternate arrangement be made. It was further emphasized that students grooming is a continuous process and be properly planned in each semester.

37. Iqbal Chair also be consulted for planning series of lectures titled "Har Lehza hai Momin".

38. Point to remain on agenda and progress be reported.

Progress Reported

39. LDC supports the students' grooming activities under skill areas mentioned in 'Life and Employability Skills' curriculum. 'Islamic values' has been added to the existing areas. Development of these skills is an ongoing process. As a practice, respective campuses are requested to tender their training need in these areas.

40. For Islamic values, the lecture series titled 'Her Lehza Hai Momin', conducted for faculty members, would be run for students every semester.

Decision 34(2643)

41. Point dropped. Efforts for grooming of students be continued.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director LDC Director Campuses	Director LDC
Statutory Documents affected:	-	

Item 2709: MS Islamic Banking & Finance at BUIC - Progress

Responsibility: Director BUIC

Decision of the 33rd ACM

42. The Council resolved the following:

- a. Shifting of MS Islamic Banking & Finance at BUIC from Weekend to Evening format approved wef Fall-2019.
- b. HOD (MS) BUIC is to make concerted efforts to increase the intake of students for subject program.

43. Point to remain on agenda and progress be reported.

Progress Reported

44. 8 students enrolled in Spring 2018 Semester.

45. 5 students enrolled in Fall 2018 Semester.

46. 7 students enrolled in Spring 2019 Semester.

Discussion

47. It was deliberated that despite efforts including approaching the banking sector, low intake/lack of response has persisted. MS programs have not achieved breakeven or profitability.

Decision 34(2709)

48. Deans Committee be formed to study and may propose MS Programs on yearly basis.

49. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	All Deans HOD (MS) BUIC	Dean MSS
Statutory Documents affected:	-	

Item 3127: MS Peace, Conflict & Development Studies at BUIC - Launch Proposal

Responsibility: Registrar

Decision of the 33rd ACM

50. Point to remain on agenda and progress be reported.

Progress Reported

51. The case file was returned un-actioned by HEC due to irrelevant PhD Faculty Members. The same will be processed by concerned department upon availability of relevant qualified faculty.

Decision 34(3127)

52. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Registrar	-
Statutory Documents affected:	-	

Item 3130: MS Management Sciences at BULC - Launch Proposal

Responsibility: Director BULC

Decision of the 33rd ACM

53. Point to remain on agenda and progress be reported.

Progress Reported

54. MS (Management Sciences) has been launched and 13 students are enrolled in Fall-2019.

Decision 34(3130)

55. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director BULC	Director BULC
Statutory Documents affected:	-	

Item 3138: Business School at BUIC - Creation from Existing MS Department

Responsibility: DG BUIC

Decision of the 33rd ACM

56. It was resolved that:

- a. Progress report on establishment of Business School and AACSB accreditations be presented to the Rector on monthly basis. While presenting, main focus be given to implementation plan.
- b. In the title, word "BUKC" be replaced with "BUIC" as this point was initially presented by BUKC but after discussion it was approved for BUIC.

57. Point to remain on agenda and progress be reported.

Progress Reported

58. Two Departments have been created at BUIC;

- a. Business Studies Department (MBA and BBA Programs).
- b. Management Studies Department (BS Economics, BS (A&F), all MS/MPhil and PhD Programs).

59. Course outlines and program goals of all BBA and MBA programs in Fall-2019 Semester have been prepared as per the learning instructions of AACSB.

60. BS Department is working on the eligibility and application of AACSB with possible submission in the first quarter of 2020.

Discussion

61. It was apprised that 2100 students are studying in Business Sciences (BS) department in various BBA/MBA programs. Whereas almost 1300 students are in various BS/MS and PhD Programs under MS Department. Dean MSS highlighted that achieving autonomy as a Business School is far reaching and requires strenuous efforts. Registrar concluded that the Organizational Structure is already in place whereas AACSB accreditation is also on the agenda of BOG agenda.

Decision 34(3138)

62. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD (BS) BUIC	DG BUIC
Statutory Documents affected:	-	

Item 3141: Approval of Curriculum, Course Codes, Road Map, Academic Examination Rules BS (Nursing) Four Years Semester based program at Pakistan Navy Nursing College (PNNC) - PNS SHIFA Karachi

Responsibility: Dean HS

Decision of the 33rd ACM

63. Curriculum was approved in 32nd ACM, however, Director Examinations pointed out that marks allocation of respective subjects and its alignment with the Examinations Policy is still awaited. The Chair directed Principal PNNC to provide requisite details of marks allocation to Examinations Directorate and present the same in next ACM.

64. Point to remain on agenda and progress be reported.

Progress Reported

65. BSN curriculum Clinical assessment described as Pass/Fail, aligned According to BU rules and Policy.

66. BSN curriculum is reviewed by PNNC/Dean HS for standardized marks allocation (internal assessment, midterm exams, and final exams) of all subjects. Standardized Marks allocation of all subjects is according to HEC 2011 BSN Curriculum.

67. Scheme of marking (Theoretical) is according to BU Policy.

Internal Assessment = 35 Marks

Quizzes (at least three per semester), Projects/Assignments/Presentations/Practical/Case studies/Class participation

Mid-term examination = 25 Marks

Final Examination (Comprehensive) = 40 Marks

Total = 100 Marks

Decision 34(3141)

68. The council decided that:

a. Scheme of marking (Theoretical) was approved by the Council and the PNNC has to comply the scheme of 15 marks for Quizzes and 20 Marks for the Projects/Assignments/ Presentations/Practical/Case studies/Class participation in consultation with the Examinations Directorate (Minimum 3 quizzes and 2 assignments & project).

b. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean HS Director Examinations Director HS Director IT Principal PNNC	Director HS
Statutory Documents affected:	-	

Item 3203: BS TV Broadcasting Program at BUIC - Launch Proposal

Responsibility: Director BUIC

Decision of the 33rd ACM

69. The Chair directed the Director BUIC for allocation of required class rooms and availability of lab facilities for successful launch of BS TV Broadcasting Program wef Fall-2019.

70. Point to remain on agenda and progress be reported.

Progress Reported

71. The program has successfully been launched in Fall-2019. 43 students are enrolled.

Discussion

72. During the discussion, healthy intake of students of BS (TV Broadcasting) program was appreciated by the participants. Registrar remarked that additional space along with required infrastructure, once provided to Media Industry for holding programs, will contribute to the exposure for the students of BU.

Decision 34(3203)

73. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director BUIC HOD (Media Studies) BUIC	HOD (Media Studies) BUIC
Statutory Documents affected:	-	

Item 3205: PhD Program in Geo-Physics at BUIC- Launch Proposal

Responsibility: Director BUIC

Decision of the 33rd ACM

74. Program to be launched wef Fall-2019.

75. Point to remain on agenda and progress be reported.

Progress Reported

76. Admission in PhD (Geophysics) has been launched from Fall-2019. Three candidates applied for the said program. Two candidates were shortlisted for interview with Honorable Rector. One candidate has been granted provisional admission in PhD (Geophysics) by the Competent Authority.

Decision 34(3205)

77. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD (EES) BUIC	HOD (EES) BUIC
Statutory Documents affected:	-	

Item 3213: Launch of MS (Maritime Ports and Shipping Management) at BUKC
Item 3214: Review of Roadmap of MS (Maritime Trade and Logistics) at BUKC

Responsibility: Director BUKC

Decision of the 33rd ACM**Item 3213**

78. The Chair directed all concerned to make concerted efforts for successful launch of this program. Aggressive marketing strategy be adopted including writing of letters to Maritime Organizations to attract large number of students for MS (Maritime Ports & Shipping Management) Program.

79. Point to remain on agenda and progress be reported.

Item 3214

80. The Chair directed the Dean MSS to make concerted efforts for successful launch of MS (Maritime Trade and Logistics) Program.

81. Point to remain on agenda and progress be reported.

Progress Reported

82. NHQ was requested to identify Naval Officers who have been retired recently or likely to be retired in near future. Accordingly, BUKC has received a couple of nominations from NHQ. The cases are being evaluated for assessing their eligibility as per HEC guidelines.

83. Department of Maritime Sciences identified and submitted the topics of interest for Maritime Summer School Programme to help Technical University Delft, Netherland in identification of suitable faculty member from their university to be the resource person for Summer School Programme.

84. BUKC has decided to start 2 years BS (Maritime Business & Management) program for PMA graduates or any other organization in similar domain based on bridging courses in accordance with HEC guidelines with effect from Fall 2019. A case has been prepared for submission as Agenda Item for ratification in next ACM.

85. DG BUKC along with HoD (Maritime Sciences) held a meeting with DG (Port & Shipping in the first week of August 2019 to apprise him about Bahria University initiative to promote maritime education as this initiative offers a unique opportunity to Officers and Staff of Port Authorities working under the Ministry of Maritime Affairs, Government of Pakistan for obtaining a postgraduate degree i.e MS (Maritime Ports and Shipping Management).

86. During the meeting, DG (Ports & Shipping) was requested that Directorate of Port & Shipping or Ministry of Maritime Affairs must take up this matter with HEC to consider a relaxation of 2 years of education for mariners (PMA Graduates) in view of their large maritime experience after obtaining Associate Degree i.e 14 years education as generally these Offices possesses valuable experience in their field but do not fulfill the HEC criteria of 16 years of education for admission in MS Programmes. In addition, letter to more than 30 Maritime Organizations, Ministries and Govt. Departments have been dispatched to attract large number of students for MS Programs. Moreover, students and Faculty Members participated in Education Expo to Promote MS Programs held at Expo Centre, Karachi on 23rd and 24th June. Also Graduates of EMBA were also contacted and invited to join MS program.

87. MS (Maritime Ports & Shipping Management) and MS (Maritime Trade and Logistics) programs at BUKC have been widely advertised through print and electronic media. Both the programs would start wef Fall 2019.

88. Interviews have been conducted for the recruitment of PFM and VFM for the discipline of Maritime Sciences. Dr. Yasmeen Zameer, Assistant Professor at BUKC has been selected for research at Chinese University. She is scheduled to leave for China soon.

Discussion

89. The Council was apprised regarding launching of both the programs, efforts made and resultant intake. It was identified that criteria for the program needs to be reviewed w.r.t requirement of specific background, leading to low intake. Merging both the programs was also deliberated.

Decision 34(3213 & 3214)

90. The Council decided that:

- a. Dean MSS is to see intake of Spring Semester and forward comprehensive proposal regarding curriculum review leading to finalization of approach to HEC for changes in the programs.
- b. Both points to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD (Maritime Sciences) BUKC	Dean MSS
Statutory Documents affected:	-	

Item 3301: Establishment of School of Maritime Sciences at BUKC

Responsibility: DG BUKC

Decision of the 33rd ACM

91. After prolong discussion, the Council approved the recommendations as elaborated in Appendage 3301 (page 103). The Council approved the following:

- a. Establishment of Department of Maritime Sciences at BUKC wef Fall-2019.
 - b. Establishment of School of Maritime Sciences at BUKC wef Spring-2020.
92. Point to remain on agenda and progress be reported.

Progress Reported

93. Department of Maritime Sciences has been established at BUKC. Dr Asif Inam has joined as HoD Maritime Sciences wef 16 May 2019. Moreover, the process of hiring of faculty members is in progress.

94. According to the approval granted by BUHO, Department of Maritime Sciences will be upgraded to School of Maritime Sciences in due course of time.

Discussion

95. Detailed discussion was held w.r.t size and layout plan/design of the School. Considering shortage of the available resources vis-à-vis diversion of large amount of funds for BUMDC Project at Islamabad, preparing of proposal regarding smaller yet efficient multi story buildings was emphasized.

Decision 34(3301)

96. The Council decided that:

- a. Innovation Centre at BUIC be visited by DG BUKC to study/replicate the model/facility.
- b. Moreover, efforts to arrange extra land from HQ COMKAR/PNS JAUHAR be also continued for favorable outcome.
- c. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director BUKC	DG BUKC
Statutory Documents affected:	-	

Item 3302: Curriculum Review of all Undergraduate Programs - Inclusion of Quranic Language Course in respective road-maps

Responsibility: Director LDC

Decision of the 33rd ACM

97. After prolonged deliberation, the Council resolved that:

- a. Proposal to launch Quranic Language Courses was approved in principle by the Council.
- b. QAL-I & QAL-II be included in first year road maps in all undergraduate programs.
- c. Roadmap be revised with course codes of these courses as per BU policy.
- d. A Committee headed by DGIC, all Deans, DF, HOD (HSS) BUIC and Dr. Najamul Sehar of BUMDC as members may be constituted to look into further modalities of Quran Language Courses.

98. Point to remain on agenda and progress be reported.

Progress Reported

99. Subsequent to successful completion of two batches of QC-1 by LDC, a Committee headed by DGIC was formed to include QAL-I and QAL-II into the existing scheme of studies. The matter being purely academic in nature, Deans of various faculties at BU are part of this Committee. The Committee is functional and has done some work for inclusion of QAL-I and QAL-II into the existing scheme of studies.

Decision 34 (3302)

100. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director LDC	Director LDC
Statutory Documents affected:	-	

Item 3307: MS Economics at BUIC - Launch Proposal

Responsibility: Director BUIC

Decision of the 33rd ACM

101. The Chair directed HOD (MS) BUIC to visit HEC for clarification of the research methodology as an Elective subject or otherwise.

102. Roadmap of MS (Economics) placed at Appendix 3307 (page 134) of two years duration is approved where Research Methodology be offered as an elective in 1st Semester and Applied Econometrics in 2nd Semester. Case of MS (Economics) be re-submitted to HEC along with revised roadmap for issuance of NOC.

103. Point to remain on agenda and progress be reported.

Progress Reported

104. NOC has been received from HEC.

Discussion

105. HOD (MS) BUIC suggested commencement of 1st Semester wef Fall-2020 for expected better intake. The point was agreed.

Decision 34 (3307)

106. The Council decided that:

- a. 1st Semester of the program be commenced wef Fall-2020.
- b. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD (MS) BUIC	Director BUIC
Statutory Documents affected:	-	

Item 3316: Launch of lateral entry of graduate with 14 years education (BA/B.Sc/ B.Com etc) into 5th semester of BBA program through bridging semester

Responsibility: All HODs (MS)

Decision of the 33rd ACM

107. The Council approved the launch of separate BBA Program (76 Credit Hours) for the students having 14 years education wef Fall-2019 at all 3 x campuses (BUIC, BUKC & BULC) in morning and evening format. Detailed roadmap and curriculum along with details of bridging semester is placed at Appendage 3316 (page 210) of MOM.

108. Point to remain on agenda and progress be reported.

Progress Reported

109. **BUIC**. BBA 2 Years program for graduates with 14 Years education has been launched wef Fall-2019. 18 students are enrolled in morning and 15 in evening format.

110. **BUKC**. BBA 2 Years program for graduates with 14 Years education has been launched wef Fall-2019. 21 students registered for morning session.

111. **BULC**. Nil admission.

Decision 34 (3316)

112. After detailed deliberation the Council decided that program be launched at BUIC and BUKC, whereas for BULC, Dean MSS is to conduct a feasibility study for launch of the program.

113. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director BULC HOD (BS) BUIC HOD (MS) BUKC	Dean MSS
Statutory Documents affected:		-

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 MSS

Decision of the 33rd ACM

114. After discussion, the Council resolved that:

- a. Bachelor of Science in Supply Chain Management Program be aligned with BS(MIS) and BE programs being offered to OPS and Technical branch cadets at PNS JAUHAR/PNEC through NUST.
- b. Dean MSS is to study NUST model implemented at PNS JAUHAR/PNEC and put up detailed study report along with recommendations in next ACM. While carrying out study, issuance of same degree to Civilian students also be considered.

115. Point to remain on agenda and progress be reported.

Progress Reported

116. Study Report submitted by Dean MSS is attached as Appendage 34(3321) (page 52).

Discussion

117. Various issues w.r.t 4.5 Years duration of Bachelor of Science in Supply Chain Management program to be aligned with PNSL were highlighted including the shortage of space/infrastructure besides 03 Semesters at PNA for PN under training officers. Change of nomenclature of BS (SCM) for BU was also deliberated.

Decision 34 (3321)

118. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean MSS	Dean MSS
Statutory Documents affected:	-	

Item 3330: Implementation of ACM Approved Academic Program Roadmaps by Constituent Units

Responsibility: Registrar

Decision of the 33rd ACM

119. The Council discussed all pros and cons of the SOPs notified through Registrar Notification. After detailed deliberation, the Chair directed to revise these SOPs and process on file for approval.

120. Point to remain on agenda and progress be reported.

Progress Reported

121. The revised SOP has been approved and issued to all concerned vide letter RBU/344/278 dated 10 June 2019 is attached as Appendage 34(3330) (page 61) for ratification by ACM.

Decision 34 (3330)

122. The SOP as per Appendage 34(3330) was ratified by the Council. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Examinations Director Academics Director Admissions Director QA Director IT Director Campuses HODs all Campuses	-
Statutory Documents affected:	Updating of IT Policy, Roadmaps in CMS and BU Website	

New Items**Item 3401: Addition of Elective Courses in BEE Program**

Sponsor: HOD (EE) BUKC

Referral Authority: FBOS ES

Summary of the Case

123. The dynamics of industry are changing, laying a premium on relevant new elective courses for students of engineering & computing specializations. Following electives have been identified in FBoS-ES for addition to the pool of electives for Electrical Engineering undergrad program:

Course Codes	Course Title	Credit Hours	Type
CSC 488 (30th ACM)	Big Data Analytics	03	Depth Elective
CSC 410 (27th ACM)	Introduction to Cloud Computing	03	Depth Elective
CSC 412 (14th ACM)	Artificial Intelligence	03	Depth Elective
EET 461 (New Course)	Industrial Internet of Things (IIoTs)	03	Depth Elective
MGT 426 (New Course)	Sales and Marketing Strategies for Engineers	02	Management Science Elective

124. The course outlines are attached at Appendix 3401 (page 63) for approval by ACM.

Discussion

125. HOD (EE) BUKC presented the case. Director Academics pointed out an anomaly w.r.t course title "Sales and Marketing Strategies for Engineers" Course Code MGT 426. It was replied that it will be a new course with new code as per proposed title.

Decision 3401

126. Proposed electives as per Appendix 3401 approved by Council wef Spring 2020 intake.

127. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Admissions Director Examinations Director Academics Director IT HODs (EE) BUIC & BUKC	HOD (EE) BUKC
Statutory Documents affected:	Updating of Unified Course Codes Book, Prospectus and BU Website	

Item 3402: Revision of Curriculum - MS (CE) Program

Sponsor: HOD (CE) BUKC

Referral Authority: FBOS ES

Summary of the Case

128. A Committee comprising of the following members was constituted by HoD (CE) BUIC to align the roadmap/curriculum of the MSCE program in accordance with the latest HEC guidelines issued during their last visit:

- a. Engr. Dr. Shehzad Khalid
- b. Engr. Dr. Amina Jameel
- c. Engr. Dr. Shahzad Hasaan
- d. Engr. Dr. Usman Akram (External)

129. HOD (CE) BUIC presented the case. The agenda item was deliberated in length in FBoS and house recommended to discuss agenda item in DBOS of CE BUKC and prepare consolidated roadmap. The revised roadmap duly endorsed by both departments of Computer Engineering at BU was approved by the house.

130. Revised MS (CE) Roadmap are attached at Appendix 3402 (page 71) for approval by ACM.

Decision 3402

131. Revised Roadmap as per Appendix 3402 approved by the Council wef Fall 2020 intake.

132. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Admissions Director Examinations Director Academics Director IT HODs (CE) BUIC & BUKC	HOD (CE) BUKC
Statutory Documents affected:	Updating of Unified Course Codes Book, Prospectus and BU Website	

Item 3403: Revision of Roadmap - MS Telecom and Networking (MS-T&N) Program

Sponsor: HOD (CS) BUIC

Referral Authority: FBOS ES

Summary of the Case

133. Committee of following was constituted by HoD (CS) to revise the Roadmap for the MS-T&N Program in accordance with HEC guidelines.

- | | |
|----------------------------|--------|
| a. Dr. Moneeb Gohar | Head |
| b. Prof. Dr. Faisal Bashir | Member |
| c. Dr. Kashif Naseer | Member |

134. The Revised Roadmap of MS(T&N) Program was presented in FBoS-ES, which was deliberated in length. Revised roadmap with minor changes was recommended to be forwarded to ACM for approval.

Decision 3403

135. Revised Roadmap as per Appendage 3403(page 78) approved by the Council wef Spring 2020 intake.

136. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Admissions Director Examinations Director Academics Director IT HODs (CS) BUIC & BUKC	HOD (CS) BUIC
Statutory Documents affected:	Updating of Unified Course Codes Book, Prospectus and BU Website	

Item 3404: Addition of Elective Course in LLM & PhD

Sponsor: HOD (Law) BUIC

Referral Authority: FBOS MSS

Summary of the Case

137. Revision of roadmaps is a regular practice in BU in order to keep the students/researchers abreast to latest trends of the world. A thorough knowledge in the field of Islamic Laws w.r.t family issues is considered very important for a legal professional. Due to demand of the post graduate students/ research interest of the faculty in the advanced research areas of Islamic Family Laws, following elective course in LL.M and PhD program has been recommended for approval by ACM.

S.No	Course Code	Course Title	Credit Hours
a.	LAW 756	Islamic Family Laws	3

138. Detail of the course along with its contents is placed at Appendage 3404 (page 96) for approval by ACM.

Decision 3404

139. The Council decided that:

- a. Inclusion of new Elective Course titled Islamic Family Laws (Course Code LAW 756) as per Appendage 3404 approved in the roadmap of LLM and PhD (Law) wef Spring 2020 intake.

b. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Admissions Director Examinations Director Academics Director IT HOD (Law) BUIC	HOD (Law) BUIC
Statutory Documents affected:	Updating of Unified Course Codes Book, Prospectus and BU Website	

Item 3405: Amendment in Eligibility Criteria of LLM Program

Sponsor: HOD (Law) BUIC

Referral Authority: FBOS MSS

Summary of the Case

140. LLM (General) and LLM (International Maritime Laws) were approved in 25th and 30th ACM respectively. Subsequently, both programs were commenced wef Fall-2016 and Spring-2019. Admission criteria for both LLM programs as approved is as follows;

“LLB degree from Pakistan Bar Council (PBC)/ HEC recognized university/institute with minimum CGPA of 3.00/4.00 or 55% marks where CGPA is not given.”

141. Whereas it is pertinent to mention that since the LLM program started at BUIC a large number of applicants from Punjab University and other famous HEIs running LLB Program that comes under Punjab University examination and evaluation system were unable to apply because of their usual marks percentage and high eligibility criteria of BU LLM Programs. Many prospective candidates are submitting applications each year, for the consideration of admission in LLM Program of Bahria University.

142. It may be highlighted that Admission criteria for all other Masters level (MPhil as well as MS) programs being offered in all disciplines at BU is 50% marks OR 2.5 CGPA in relevant BS program (Rule 11). Furthermore, HEC guidelines for MS/MPhil program admission eligibility criteria in all disciplines/degree is similar to the BU criteria and there is no specific rule/instruction for LLM programs. The only competitor of BU in the market for LLM program i.e., International Islamic University Islamabad (“IIUI”) is also following the HEC eligibility criteria of 2.5/4.00 in semester system or 50 % marks in annual System, copy of the IIUI eligibility criteria is attached as Appendage 3405 (page 110).

143. In spite of the high eligibility criteria Department of Law is effectively meeting its target intake for the programs however, in order to interest large number of applicants and to maintain sufficient applicants to student ratio and quality intake of Punjab University graduates in both LLM program, it is proposed that eligibility criteria for admission in LLM programs may be approved as;

“LLB degree from Pakistan Bar Council (PBC)/ HEC recognized university/institute with minimum CGPA of 2.5/4.00 or 50% marks where CGPA is not given.”

Implication

144. Amendment in Rule 11 of Bahria University MS/MPhil Rules 2017.

Recommendation

145. Eligibility criteria for admission in LLM programs may be approved as "LLB degree from Pakistan Bar Council (PBC)/ HEC recognized university/institute with minimum CGPA of 2.5/4.00 or 50% marks where CGPA is not given."

Discussion

146. Point was extensively deliberated. Registrar explained the BU has obtained approval from HEC on a higher side i.e 3.00 CGPA, whereas other Universities are not compelled to follow the same. Accordingly, quality intake, specially from Punjab University, is not approaching BUIC for admission in LLM. Divergent views were given w.r.t whether the case may be taken up with HEC or it may be finalized at BU end.

Decision 3405

147. The Council resolved the following:

- a. Amendment in eligibility criteria for LLM program approved in principle as under:
"LLB degree from Pakistan Bar Council (PBC)/HEC recognized university/institute with minimum CGPA of 2.5/4.00 or 50% marks where CGPA is not given".
- b. Options/strategies w.r.t taking up the case with HEC be proposed on file for formal approval by the Rector.
- c. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	HOD (Law) BUIC	Director BUIC
Statutory Documents affected:	-	

Item 3406: Addition in Elective Courses - BS Psychology

Sponsor: HOD (PP) BUKC

Referral Authority: FBOS PP

Summary of the Case

148. As the BS Psychology program is running in the Karachi, Lahore and Islamabad campuses, the addition of one Elective Course in the 8th Semester (1. Sports and Exercise Psychology) (Course Code SEP 458) will bring about an increase in the available list of Electives. The point was raised and approved unanimously in the FBOS held on 28th February 2019.

149. The course of Sports and Exercise Psychology will increase the scope of the field by providing students a wider range in the available list of Electives. As such this has been proposed as an addition in the current list in the 8th Semester.

150. The course description is attached as Appendage 3406 (page 111).

Decision 3406

151. The Council decided that:

- a. Proposed Elective Course titled "Sports and Exercise Psychology "(Course Code SEP 458) in the roadmap of BS (Psychology) in 8th Semester approved as per Appendage 3406 wef Spring 2020 intake.

- b. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Admissions Director Examinations Director Academics Director IT HODs (PP) BUIC, BUKC & BULC	Director IPP
Statutory Documents affected:	Updating of Unified Course Codes Book, Prospectus and BU Website	

Item 3407: Ratification of SOP for Students Exchange with Istanbul Technical University, Turkey

Sponsor: Director IO

Referral Authority: File No.IO/SOP/ITU/01

Summary of the Case

152. In line with the Strategic Plan of Bahria University; a new MoU including agreement for exchange of students has been signed with Istanbul Technical University (ITU), Turkey.

153. According to the MoU, Bahria University can send students on exchange basis to ITU. There is no tuition fee that is to be paid by the student to ITU. The students will only have to bear their travel, living & miscellaneous expenses in Turkey.

154. Bahria University already has similar agreement with Yasar University (Turkey), York St. John University (UK), AIMST University (Malaysia), Izmir University of Economics (Turkey), Altinbas University (Turkey), Yeditepe University (Turkey), Sapienza University (Italy) & Montana State University Billings (USA) with the SOPs for selection and credit transfer process, approved by the ACM.

155. Keeping in view the practice followed for the other universities, an SOP was prepared on the similar lines defining the students' selection and credit transfer mechanism under the exchange programme. The same has been approved by the Competent Authority. Same is attached as Appendage 3407 (page 112) for ratification by ACM.

Decision 3407

156. The Council decided that:

- a. SOP regarding Students Exchange with Istanbul Technical University (ITU), Turkey as per Appendage 3407 ratified.
- b. Point dropped.

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

Item 3408: Amendment in the Minutes of 30th ACM (Item # 3008)

Sponsor: HOD (EE) BUKC

Referral Authority: FBOS ES

Summary of the Case

157. The BEE road map for power system stream was approved in 30th ACM which was held on 3rd Oct 2017. In the decision of Item # 3008 Page No. 29, it was written that the implementation of the road map was effective from Spring 2018 intake.

158. Undergraduate Engineering Programs intake are in Fall only. The roadmap is effective wef Fall 2017 intake.

159. 30th ACM minutes, Item 3008, para 160 may be amended as follows:

“Addition of the ‘Power System Stream’ to the BEE roadmap, and addition of courses to the existing roadmap for the Power Systems Stream only, as highlighted at Appendage 3008 (page 176) approved, wef the Fall 2017 intake”.

Decision 3408

160. The Council decided that:

- a. Amendment regarding implementation of the roadmap containing “Addition of the ‘Power System Stream’ to the BEE roadmap, and addition of courses to the existing roadmap for the Power Systems Stream only, as highlighted at Appendage 3008 (page 176) of MoM of 30th ACM approved, wef the **Fall 2017** intake” for BUKC.
- b. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Academics Director IT HOD (EE) BUKC	HOD (EE) BUKC
Statutory Documents affected:	Updating of BU Website & MoM 30 th ACM	

Item 3409: Revision of Program Educational Objectives (PEOs) for BEE Program

Sponsor: HOD (EE) BUKC

Referral Authority: FBOS ES

Summary of the Case

161. With reference to the observations made by PEC, EE-KC amended the Program Educational Objectives (PEOs) in consultation with EE-IC. Revised Program Educational Objectives (PEOs) were presented in 19th FBoS-ES, which were deliberated by house in detail.

162. With minor changes, the recommendations were approved in line with PEC guidelines. The Revised Program Educational Objectives (PEOs) for BEE are attached at Appendage 3409 (page 115) for approval by ACM.

Decision 3409

163. The Council decided that:

- a. Revised PEOs as per Appendage 3409 approved.
- b. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director IT HODs (EE) BUIC & BUKC	HOD(EE) BUKC
Statutory Documents affected:	Updating of BU Website	

Item 3410: Updation and alignment of Departmental Mission and Vision Statements with the University Mission and Vision

Sponsor: HOD (Law) BUIC

Referral Authority: FBOS MSS

Summary of the Case

164. The Department of Law at BUIC was established in 2010 with the commencement of 5 years LLB program along with the certificate courses and diplomas. Later, LLM (General) and LLM (International Maritime Laws) were started wef Fall 2016 and Spring 2019 respectively. PhD (Law) wef Spring 2018 was another milestone in its growth. In recognition of its programs and the evolution of the standards and reputation of the department the number of intakes was increased from 50 to 75 wef Fall-2019.

165. Development and expansion will continue with the same pace and energy to achieve the core competence in legal studies and research in the field of jurisprudence at par with international standards with the clear aim to convert it into the center of excellence in legal education. In order to achieve the future targets, it is felt imperative to update the Vision and Mission statements of the department and align the same with the University Vision and Mission. Accordingly, following Vision and Mission are proposed w.r.t Department of Law.

166. Proposed Vision and Mission of the department viz a viz Bahria University are tabled below.

Description	Bahria University (As per BU Statutes)	Vision and Mission of the Department (Existing)	Department of Law (Proposed for Approval)
Vision	To become an internationally recognised university that contributes towards the development of nation through excellence in education and research.	To be Centre of Excellence and prestigious institution in the field of legal studies in Pakistan.	"To become a centre of excellence by achieving highest academic and professional standards in the field of law through education and research contributing towards the advancement of just and fair society."
	To attain the highest standards in teaching, learning and research at par	To create an environment conducive to research and an	"Department of law is committed To provide legal education and"

Mission	with the international standards.	ethos of integrated learning through a merger of legal sciences with other social and physical branches of knowledge for the welfare and development of human beings.	training in practice with the highest international standard of excellence to produce world class legal professionals and research scholars imbued with ethical values”.
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Decision 3410

167. The Council decided that:

- a. Revision in Vision and Mission Statement approved (**as amended**).
- b. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director IT HOD (Law) BUIC	HOD (Law) BUIC
Statutory Documents affected:	Updating of BU Website	

Item 3411: Modular Teaching at FMDC

Sponsor: Dean HS

Referral Authority: FBOS HS

Summary of the Case

168. With reference to letter no DE/FMDC/2019/846, BU team with health professional education experts headed by the Pro Rector, evaluated the FMDC modular system of education that includes review of study guide, educational objectives, teaching and learning strategies, assessment methods and how they are integrated throughout the module.

169. Following faculty members evaluated the program:

Prof Dr Ambreen Usmani	Deputy Director DME. Senior Professor, Department of Anatomy
Prof Dr. Talea Hoor	Joint Director DME, Professor, Department of Pharmacology
Dr. Shafaq Sultana	Senior Lecturer, Department of Medical Education.

170. The Modular Teaching at FMDC is recommended for the next academic year provided:

- a. FMDC can arrange the necessary infrastructure required for the smooth conduct of modular system.
- b. A properly functioning curriculum committee is put in place with its own terms of reference (TOR's).
- c. Formal request to be sent through proper channel for the study guide. The request will then be processed in Faculty Board of Studies (FBOS).
- d. A properly planned and functional faculty development program initiated through Department of Medical Education and train all faculty members before implementing the modular system

- e. Department of Examination with dedicated and trained staff in liaison with Department of Medical Education should be established and an assessment policy should be designed and approved by competent authorities.
- f. Policy and methods to incorporate internal evaluation in annual exam. Approval for 15% internal evaluation will be given after the implementation of modular system and evaluation of results.
- g. Recommended in FBOS for ACM provided FMDC ratifies the observation made by the committee.

Discussion

171. Outcome of the visit by the BU Committee and response of FMDC Authorities was extensively deliberated. It was agreed that FMDC Authorities may be made bound to follow timeline w.r.t implementation of Modular Teaching 2021 onward. Furthermore, training of trainers by BUMDC was also emphasized besides alignment of rules and procedures pertaining to affiliation with University to avoid different system of education.

Decision 3411

172. The Council decided that:

- a. Issuance of revised MBBS/BDS Curriculum and Modular Teaching Study Guide to FMDC - Approved.
- b. Adoption of Modular Teaching to be complied by FMDC for batch 2020-21 onward.
- c. Modalities for compliance including training of Faculty to be worked out by Secretary BU Affiliation Committee (DE) with the assistance of DHS.
- d. Point to remain on the agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean HS/Principal BUMDC Director Examinations Director HS	Director HS
Statutory Documents affected:	-	

Item 3412: To devise a Uniform Policy for award of Medals and Merit Certificates to Undergraduate and Postgraduate students of semester-based programs of Health Sciences at BUMDC aligned with existing criteria of BU

Sponsor: Prof Nasim Karim Chairperson PGP-TM

Referral Authority: FBOS HS

Summary of the Case

173. The existing rules of BU for Medical & Allied Health Sciences, undergraduate and postgraduate programs need modification as these programs have annual induction, and all relevant institution of Health Sciences have rules that are different from non - Health Sciences subjects.

174. BUMDC recommendations are as follows:

- a. For award of medals in Undergraduate programs (DPT, BS-Nursing, & BS-MLT) and Postgraduate MPhil Programs (Anatomy, Pathology & Pharmacology etc.) existing BU Rules be maintained.
- b. Students of Health Sciences Programs in BU achieving the prescribed criteria be awarded merit certificates, on completion of degree programs. This is alignment with other Health Sciences Universities in the country.
- c. Merit Certificates in faculty of Health Sciences shall be awarded to under graduate and postgraduate programs in professional subjects only.
- d. Merit Certificates may be awarded to the student who fulfills BU baseline eligibility criteria for honours and awards as specified in BU Rules, in vogue to who achieves highest marks in a subject/ course at least 90% in undergraduate programs and 85% or above marks in postgraduate programs.
- e. Recommended in FBOSHS for ACM approval.

Discussion

175. Chairperson PGP-TM at BUMDC presented the case. It was deliberated that different grading systems are being followed i.e percentage basis and CGPA/Grades for modular and semester based program respectively.

Decision 3412

176. It was decided that proposal of BUMDC be aligned as per Academic Rules in vogue and case be put up on file for processing through Examinations Directorate.

177. Point to remain on the agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean HS Director Examinations	Dean HS
Statutory Documents affected:	-	

Item 3413: Comprehensive Curriculum Document for Medical & Dental College including Mission Statement, Curriculum Committee Organogram and TORs

Sponsor: Prof Dr. Shazia Shakoor

Referral Authority: FBOS HS

Summary of the Case

178. With reference to last PMDC visit dated 7th August 2019 there were strong observations on existing curriculum and it was suggested to formulate comprehensive curriculum document which includes:

- a. Curriculum Documents
- b. Organogram of Curriculum Committee
- c. TORs of Curriculum Committee

179. Details are attached as Appendage 3413 (Page117).

Decision 3413

180. The Council decided that:

- a. Proposal approved in principle.
- b. Mission statement (duly Revised) along with Curriculum Committee Organogram and TORs be processed on file for formal approval by the Rector.
- c. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean HS Director HS	Dean HS
Statutory Documents affected:		-

Item 3414: Ratification of SOP for Entering Marks of Retake Final Exams into CMS

Sponsor: Director Examinations

Referral Authority: File No. BUIC/618/1/19/279

Summary of the Case

181. Compilation of students', results by the faculty/ teachers and its submission to the Head Office (Exams Dte) has been based on CMS, with checks & limits at each level from the faculty uploading the result till the Director Exams, through respective HOD and Director CU. Process thus adopted and authorities at each level have been approved in 32nd ACM (Decision 3028) and formulated vide BUHO letter BU-IT/2019/94 dated 18 June 2019. This process does not include uploading of Retake Exams, which are taken by the student who have missed the mid-term/final exams due self-hospitalization or close family death. An SOP has been accordingly formulated to cover this aspect, with the assistance of Registrar office, DIT, DQA, DAA and BUIC and has been approved by Rector on file for adoption by all stake holders.

182. SOP is attached as Appendage 3414 (page 123) for ratification by ACM.

Decision 3414

183. The Council decided that:

- a. SOP as per Appendage 3414 ratified (wef Fall 2020 Semester).
- b. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Examinations Director IT	Director Examinations
Statutory Documents affected:		-

Item 3415: Review of Penalty for Impersonation

Sponsor: Director Examinations

Referral Authority: File No. BUIC/618/1/1/2019/146

Summary of the Case

184. Subsequent to a case of impersonation during final exams at BUIC, it was noted that application of relevant rules promulgated vide BU Academic Rules 13.10 needs amplification, so as to cover the impersonated as well as the impersonator, while making penalty more strict and comprehensive to discourage this most serious misconduct during an examination. Current penalty for impersonation contained in BUAR 3.10 (table 10) is as under:

- a. Grade 'F' in all subjects.
- b. Expelled from the university.
- c. Fine of Rs. 5,000/-.

185. **Statutory Effect(s) (in any).** BU Academic Rule 13.10 to be amended, followed by corresponding updating of Students Handbook.

186. **Recommendation.** BU Academic Rule 13.10 (Table 10) may be amended for the penalty for Impersonation, as under:

- a. Grade F in all subjects of relevant as well as previous semesters studied at BU (including the impersonator/facilitator, if a student of BU).
- b. Expulsion from the university (including the impersonator/ facilitator, if a student of BU).
- c. In case the impersonator/facilitator is an ex-student of BU, quashing of his/ her Degree & Final Transcript, and letter to this effect promulgated to the HEC as well as all universities of Pakistan (by the Registrar office).
- d. In case the impersonator/facilitator is not a BU student, an FIR may be lodged for the offence, as per law of the land.

Discussion

187. Recommended Penalties were extensively deliberated vis-à-vis nature of offence and other similar act of misconduct by the students.

Decision 3415

188. The Council resolved processing of following amendment in BU Academic Rule 13.10 regarding clauses pertaining to Impersonation, followed by corresponding updating of Students Handbook:

- a. Grade 'F' in all subjects of relevant semester studied at BU (including the impersonator/facilitator, if a student of BU).
- b. Expulsion from the University (including the impersonator/ facilitator, if a student of BU).
- c. In case the impersonator/facilitator is an ex-student of BU or not a BU student, FIR may be lodged for the offence, as per law of the land.

189. Point to be ratified from Executive Committee.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Admissions Director Examinations Director Academics Director IT	Director Academics
Statutory Documents affected:	Updating of BU Academic Rules, Students Hand Book, CMS & BU Website	

Item 3416: Approval of Mission Statement and Course Codes of PhD Media Studies - BUIC

Sponsor: HOD (Media Studies) BUIC

Referral Authority: FBOS MSS

Summary of the Case

190. The Department of Media Studies has launched PhD Media Studies Program in Spring 2018 as approved in 29th ACM item No. 2834. The Course Codes and Mission statement of the said program were not included in ACM approval. The internal audit committee suggested that exclusive Mission statement of the program should be developed. Moreover, the course codes are developed in the light of guidelines of examination department. Mission statement, Complete Roadmap and course descriptions are attached as Appendage 3416 (page 124).

Decision 3416

191. The Council decided that:

- a. Mission Statement for PhD Media Studies Program be referred to Dean MSS for necessary changes and subsequent approval on file by Rector.
- b. Course Codes as per Appendage 3416 approved.
- c. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Admissions Director Examinations Director Academics Director IT HOD (Media Studies) BUIC	Dean MSS
Statutory Documents affected:	Updating of Unified Course Codes Book, Prospectus & BU Website	

Item 3417: Ratification of International Students Admission Policy

Sponsor: Director IO

Referral Authority: File No. IO/ISA/02

Summary of the Case

192. In order to encourage international students to join Bahria University and facilitate their admission process, the admission procedure and financial requirements for international students were revised in the 32nd ACM in view of the report submitted by a following member committee:

- a. Dean Engineering Sciences
- b. HoD Management Sciences, BUIC
- c. Director International Office

193. After executing these changes for two semesters (Spring 2019 & Fall 2019), following changes/addition have been recommended by some stakeholders to make approved procedural changes more comprehensive:

Addition 1:

- a. As per policy, international students are given time frame of one semester to meet their requirement of GAT/GRE or BU Test (if applicable) and provision of equivalency certificates.
- b. The idea behind giving above relaxations was that international students cannot conveniently meet above requirements unless they have reached Pakistan.
- c. Incase if the students is unable to meet the above requirement in given time, his/her result cannot be declared for 1st semester. However this step is not specifically mentioned in the existing procedural changes approved by the ACM, and was not addressed while requesting for result declaration of one of Afghan student from BUIC.
- d. The Exams Directorate has therefore advised that this condition shall be specified in the procedural change for International Students Admission to avoid any ambiguity in this regard.
- e. Keeping same in view, it was recommended that following clause me be added in the procedural changes of international students' admission to meet this requirement:

The result of student for the 1st semester shall not be declared unless the admission requirements of the programme have been met completely. Consequently the students shall not be registered for the 2nd semester and would not be able to continue studies till completion of admission requirement(s).

Addition 2:

- f. During admission process, children of expats approached undersigned, for considering admission of their children under category of international students. These students were holding dual nationality. The objective of revision in the admission procedure for international students was to increase the presence of international students that not only add diversity in class but contribute towards international ranking of BU.
- g. However, admission of dual nationals will not be serving the purpose of BU for international ranking. As per QS Ranking criteria, only those dual national will be considered as International Students who obtained foreign citizenship through birth, i.e. their first

passport obtained is foreign passport. Therefore for clarity purpose it is felt necessary to define International Students in the policy as follow:

All those candidates will be considered under the category of International Students, who hold foreign citizenship by birth, including dual nationals.

Revision in Clause 7:

- h. As per the approved changes, international students will not be competing with national students against admission quotas. It was therefore proposed that the admission cycle of international students shall complete prior start of admission process of national students to have clarity on available seats while devising merit lists for national students. However while processing the admission process of international students it was observed that practically it is difficult to close the admission cycle of international students prior start of admission process of national students, as most of the students were approaching during regular call of admission. Regulatory bodies such as HEC, have also advised more relaxation in terms of closing date of admission process for international students as per international practice.
- i. In view of above, following amendment is recommended in clause 7 of the International Students Admission process approved by 32nd ACM:

a. ***Existing Clause:***

The admission cycle of international student shall be completed prior to the start of admissions process of local students to have clear visibility on available seats for national students and allow sufficient time for visa processing.

b. ***Proposed Revision:***

*The admission cycle of international student shall be completed prior **finalizing merit lists for national students** to have clear visibility on available seats for national students and allow sufficient time for visa processing. **International Students may also be admitted after this timeline, where possible and required by the department, while ensuring compliance to entry requirements of the relevant programme.***

194. The above changes have been approved by the Competent Authority on file.

195. The revisions in the Admission Policy of International Students, approved by the Competent Authority may please be ratified.

Decision 3417

196. The Council decided that:

- a. SOP containing amendment proposed by DIO already approved on file, ratified.
- b. Point dropped.

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

Item 3418: Revision in SOPs for Exchange of Students with Partner Universities

Sponsor: Director IO

Referral Authority: File No. IO/SOPs/EP/02

Summary of the Case

197. Bahria University has signed exchange agreements with following international universities:

- a. Yasar University, Turkey
- b. Altinbas University, Turkey
- c. Izmir University of Economics , Turkey
- d. Yeditepe University, Turkey
- e. Izmir University of Economics, Turkey
- f. Istanbul Technical University, Turkey
- g. York St John University, UK
- h. AIMST University, Malaysia
- i. Sapienza University of Rome, Italy
- j. Montana State University Billings, USA
- k. Heilongjiang International University, China

198. As per the SOPs approved by ACM for exchange of students with above universities, BU encourages students with good academic record to go on exchange so that they can be a good brand ambassador of the university and country. But academically strong students are mostly in line for honors and awards who become ineligible as a result of exchange. It is therefore the SOPs facilitate these students by keeping them eligible for Honors and Awards.

199. In addition to above, the students prior departure sign an undertaking confirming that they will meet their remaining course work requirement on return with their batch of registration, to avoid any delays in decision pertaining to medals and to avoid undue relaxation in course load on return. This requirement is not specifically mentioned in the existing SOPs for exchange programme.

200. In order to ensure consistency between the SOP and the undertaking, it was recommended that the condition of 'completing remaining course work requirement with batch of registration' shall also be specified in the SOPs approved for the exchange programme with the partner universities.

201. In view of above, following revision has been approved by the Competent Authority in the existing SOPs:

*Students availing the exchange programme at the [partner university] will be eligible for academic honors & awards, as long as they are taking full semester loads in their studies at Bahria University **and completing remaining degree requirement with their batch of registration.***

(*amendment is highlighted)

202. It is therefore requested that the above amendment in the existing SOPs for Exchange of Students with partner universities, approved by the Competent Authority, may please be ratified.

Decision 3418

203. The Council decided that:

- a. SOP containing amendment proposed by DIO already approved on file, ratified.
- b. Point dropped.

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

Item 3419: Ratification of BS in Maritime Business & Management Program through the HEC's Bridging Semester Mechanism - Launch Proposal

Sponsor: HOD (Maritime Sciences) BUKC

Referral Authority: BUKC File

Summary of the Case

204. Department of Maritime Sciences at BUKC has decided to commence 2 years BS in Maritime Business & Management Program for the PMA graduates or any other organization in similar domain based on bridging courses in accordance with the HEC guidelines with proposed roadmap/curriculum is attached at Appendage 3419 (page 126) for approval by ACM wef Fall 2019 Semester.

205. Induct graduates holding Associate Degree in Nautical Sciences/Ship Management and/or BSc in Maritime Studies or other related fields, into the BS Maritime Business & Management program with effect from Fall-2019.

206. Induction of these graduates into the BS Maritime program will be undertaken in the fifth semester in accordance with the HEC bridging semester guidelines.

207. The batches thus inducted will end up with BS in Maritime Business & Management degree in 2 years duration. BU has recently approved a 2 years BBA degree program for the Associate Degree/ordinary graduates with 14 years of education starting Fall-2019 on a similar pattern.

208. For implementation of the 2 years BS in Maritime Business & Management program, the relevant curriculum has been carved out from the BS Maritime Business & Management Program curriculum following the HEC guidelines. A committee in this regard was constituted comprising two members from the Pakistan Marine Academy (PMA) Karachi.

209. The proposed curriculum consists of 78 credit hours including 18 credit hours of bridging courses. The curriculum also contains a pool of 11 elective courses.

210. Other related matters of the program will be as under:

- a. Eligibility criteria for the program will be Associate Degree in Nautical Sciences/Ship Management or BSc in Maritime Studies with CGPA of 2.0 or 50% marks respectively.
- b. Mandatory Community Support Program for the program of 40 hours.
- c. Holding of three out of six bridging courses in Summer Semester as regular courses without grades capping and without any prejudice to the students' right to honours & medals.

- d. The curriculum contains a mandatory non-credit internship and 6 credit hours project/thesis.

211. In the light of the above, following are recommended for approval of ACM please:

- a. Commencement of 2 years BS Maritime Business & Management Program for the PMA graduates or any other organization in similar domain based on bridging courses in accordance with the HEC guidelines with proposed Roadmap/curriculum as attached at Annex A & B wef Fall 2019 Semester be approved.
- b. 14 years education in the form of Associate Degree in Nautical Sciences/Ship management or BA/BSc in Maritime Studies or related fields with CGPA of 2.0 or 50% marks in the annual system as eligibility criteria to the Program be approved.
- c. 2 years BS Maritime Business & Management program curriculum be approved.
- d. Mandatory BU community support program of 40 hours may be approved.
- e. All BU policies of Scholarship, Honors & Awards should be applicable to these students.
- f. Holding of three out of six bridging courses in the summer semester as regular courses without grades capping and without any prejudice to the students' right to honours & medals be approved.

212. The recommendations have been approved by the worthy Rector and the case is being submitted for ratification by the Academic Council.

Discussion

213. It was apprised by HOD (Maritime Sciences) BUKC that the program has been launched. Despite various initiatives and a convincing campaign, the first batch intake experienced uncertainty due to new format. However, Dean MSS highlighted that strength will improve after Dec 2019 once the PMA batch passes out and large No of graduates may join before being appointed on ships. DGKC further highlighted that future target would be higher, based on the PMA graduates availability, late November 2019 onward. Director Examinations pointed out that degree Title, Transcript and Course Codes should be in accordance with BU Policy.

Decision 3419

214. The Council resolved that:

- a. BS in Maritime Business and Management Program along with Roadmap as per Appendage 3419 ratified wef Fall 2019 Semester.
- b. Changes in the Course Codes (if any) be processed on file for approval.
- c. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Admissions Director Examinations Director Academics Director IT HOD (Maritime Sciences)	HOD (Maritime Sciences)
Statutory Documents affected:	Updating of Unified Course Codes Book, Prospectus & BU Website	

Item 3420: Introduction of Islamic Studies Courses for grooming of students

Sponsor: Director Centre of Islamic Studies

Referral Authority: CIS File

Summary of the Case

215. Initially, Quran-1 and Quran-2 courses were approved in 33rd ACM under agenda item No.3302 for understanding of Quran. As per decision of ACM, the following Committee was constituted by Registrar:

- a. Director General, BUIC
- b. All Deans
- c. Director Finance
- d. HOD (HSS) BUIC
- e. Dr. Najamul Sehar of BUMDC

216. The scope of the committee mainly was to:

- a. Adjustment of new courses in the roadmaps of all undergraduate programs.
- b. Requirement of relevant faculty including VF.
- c. Induction criteria for faculty.
- d. Additional class rooms requirement, if any.
- e. Preparation of course out lines.

217. On joining of Dr. Habib-ur-Rehman as Director, Centre of Islamic Studies task of designing of Islamic studies courses and its contents were assigned to him by the Competent Authority. The following Islamic studies courses were designed along with detailed course outlines and lecture plans to replace the existing Islamic Studies course and were submitted to honourable Rector and was approved on file:

Sr. No.	Proposed Course Code	Course Title	Credit Hours	Semester
a.	ISL 105	Islamic Ethical Principles and Contemporary issues	1	1
b.	ISL 106	Quranic Arabic Language - 1	1	2
c.	ISL 201	Quranic Arabic Language - 2	1	3
d.	ISL 202	The Journey of Wisdom	1	4
e.	ISL 301	Knowledge, Islamic Concepts, and Contribution of Muslim Scientists	1	5
f.	ISL 302	Role of Youth in Community Development in Islamic Perspective	1	6

218. **Financial Effect:** Salary of visiting and regular faculty members.

219. **Recommendations:** The Competent Authority has approved the above-mentioned Islamic studies courses on file and to be offered to all undergraduate programs wef Fall 2019 at BUIC and wef Spring 2020 at BUKC and BULC. The case is now presented to the Academic Council for ratification. Detailed course outlines and Lecture Plans are placed at Appendage 3420 (page 145).

220. **Establishment/HR effect if any:** At least three regular faculty members will be required for BUIC and BUKC.

221. Introduction of Islamic Studies Courses for BS Programs can only be implemented if we have a deliberated implantation plan.

Discussion

222. Director CIS presented the case along with details of the efforts put in for preparation of Islamic Studies Courses for inclusion in undergraduate level programs. Registrar explained the background and need of introduction of improving the awareness of young students regarding values, honesty self-respect and enabling them to perform their professional work in a honorable/groomed manner.

223. Various ideas regarding number of credit hours for dovetailing in the existing curricula were deliberated. Objective of commencement of the courses wef Spring 2020 was also highlighted. Limitations w.r.t implementation of the courses in lieu of Islamic Studies (3x Credit hours course already as part of roadmap of Undergraduate Programs) were explained by Dean MSS. During subsequent discussion, divergent views were presented by the Deans/HODs regarding addition of the Islamic Studies Courses in various programs in backdrop of already overburdened roadmap especially in Engineering Sciences Programs. Registrar recommended that the matter may be referred to Dean Faculty of Management and Social Sciences to study and propose workable model based on practicable methods.

Decision 3420

224. The case of implementation of Islamic Studies Courses for BS Programs is to be studied by a Committee of all Deans headed by Dean MSS for preparing a workable implementation plan. The Committee is to obtain input/recommendations of DBOS & FBOS of each faculty and subsequently, implementation plan be processed on file for approval by the Rector before the next ACM.

225. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Registrar - For notification of Committee Director CIS All Deans	Dean MSS
Statutory Documents affected:		-

Item 3421: Approval of New Undergraduate Program - Bachelor of Science in Public Health in according with HEC Curriculum

Sponsor: Prof Dr. Inayat Hussain Thaver

Referral Authority: FBOS HS

Summary of the Case

226. New undergraduate program Bachelor of Science in Public Health in accordance to HEC Curriculum is academic Program and it should be implemented. Detail of Curriculum/Roadmaps are attached as Appendage 3421 (page 162).

Financial Effect

227. Space, Equipment and hiring of faculty to meet the requirements of statutory bodies as HEC.

Discussion

228. During discussion, problem of shortage of space required for commencement of classes was extensively deliberated. DGKC was requested to confirm availabilities of class room(s) of 50 students capacity for annual intake for next 04 years.

Decision 3421

229. It was decided that BUMDC in coordination with BUKC will forward the proposal once issue of space is resolved.

230. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Dean HS Director HS	Dean HS
Statutory Documents affected:	-	

Item 3422: Bachelor of Science in Supply Chain Management - New Launch Proposal

Sponsor: HOD (MS) BUKC

Referral Authority: FBOS MSS

Summary of the Case

231. The Department of Management Sciences, BUKC has planned BS in Supply Chain Management, a new program to be launched from Spring 2020. Feasibility study supports the new launch proposal. Feasibility study along with roadmap and description of courses is at Appendage 3422 (page 220). It has been processed through a committee as constituted by Dean Management and Social Sciences, DBOS and CAC meetings. The idea has been found suitable and supported at these forums. The point was also presented to Honorable Rector BU on 24 October 2019 and principally agreed to for further processing.

HR Implications

232. Would require 2 faculty members of SCM specialization.

Financial Implications

233. Positive as shown in the feasibility study.

Decision 3422

234. Launch of Bachelor of Science in Supply Chain Management (04 Years) Program along with roadmap as per Appendage 3422 approved by the Council wef Spring 2020 intake for BU Karachi Campus and Fall 2020 intake for BU Islamabad Campus.

235. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Admissions Director Examinations Director Academics Director IT HOD (MS) BUKC & BUIC	HOD (MS) BUKC
Statutory Documents affected:	Updating of Unified Course Codes Book, Prospectus, CMS and BU Website	

Any Other Points**Item 3423: Addendum to the Appendage 3020 in the 30th ACM**

Sponsor: HOD (H&SS) BUKC

Summary of the Case

236. The program of BS (English) was approved in the 30th ACM dated 3rd October 2017 and launched at BUKC. The Roadmap of program was designed for total 133 Credit Hours as per HEC guidelines.

237. According to the roadmap, the program is to be bifurcated into two stream/specializations i.e. Literature and Linguistics in 5th semester onward. Student will be opting either of them when they reach the fifth semester.

238. According to the roadmap, it will be mandatory for the students belonging to either specialization/stream to select 2 courses from the other specialization/stream in the fifth semester. Likewise, it will be mandatory for the students belonging to either specialization/stream to select 1 course from the other specialization/stream in the sixth semester.

239. But it happened so that this provision of taking the courses from across the specialization/stream could not be expressly mentioned in the curriculum roadmap. As a result, it is likely that students feel confusion when registering courses during the 5th and 6th semesters.

240. Accordingly, there is need to insert clear statement in the curriculum in this regard for guidance of the student.

Recommendation

241. Following instructions be inserted retrospectively under the heading of Note at the last page of the curriculum placed at Appendage 3020 of the 30th ACM minutes, for clarity and guidance of the students.

- a. 2 courses are to be selected from the other specialization/stream in the 5th semester.
- b. 1 course is to be selected from the other specialization/stream in the 6th semester.

Decision 3423

242. Retrospective insertion of following in the "Note at the last page of the curriculum placed at Appendage 3020 of the MoM of 30th ACM approved by the Council:

- a. 2 courses are to be selected from the other specialization/stream in the 5th semester.
- b. 1 course is to be selected from the other specialization/stream in the 6th semester.

243. Point dropped.

Action Required	Action by	Responsibility of
Implementation of the Decision	Director Academics Director IT HOD (HSS) BUKC	HOD (HSS) BUKC
Statutory Documents affected:	Updating of BU Website & MoM 30 th ACM	

Item 3424: Ratification of SOP for Students Exchange with Heilongjiang Intl. University, China

Sponsor: DIO

Referral Authority: DIO File

Summary of the Case

244. In line with the Strategic Plan of Bahria University; a new MoU including agreement for exchange of students has been signed with Heilongjiang International University (HIU), China.

245. According to the MoU, Bahria University can send students on exchange basis to HIU. There is no tuition fee that is to be paid by the student to HIU. The students will only have to bear their travel, living & miscellaneous expenses in China.

246. Bahria University already has similar agreement with Yasar University (Turkey), York St. John University (UK), AIMST University (Malaysia), Izmir University of Economics (Turkey), Altinbas University (Turkey), Yeditepe University (Turkey), Sapienza University (Italy), Istanbul Technical University (Turkey) & Montana State University Billings (USA) with the SOPs for selection and credit transfer process, approved by the ACM.

247. Keeping in view the practice followed for the other universities, an SOP was prepared on the similar lines defining the students' selection and credit transfer mechanism under the exchange program. The same has been approved by the Competent Authority. SOP is attached as Appendix 3424 (page 260).

Decision 3422

248. SOP as per Appendix 3424 ratified by the Council. Point dropped.

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

Item 3425: Review of Penalties for Academic Misconduct

Sponsor: Director IC

Summary of the Case

249. The existing penalties for Academic Dishonesty need to be reviewed by a Committee to study the scale of penalties vs the gravity of acts of misconduct and dishonesty.

250. It appears that at some places, same penalties are approved for misconduct (that falls within the purview of discipline) as well as dishonesty (that falls within the purview of academic's norms). Academic Council may seek review of the approved penalties, rationalism for scale and nature of misconduct & academic dishonesty.

251. A Committee may be constituted to review the Academic Misconduct Chapter-13 (para 13.10.1 Table 10) of Academic Rules.

Discussion

252. The Director Islamabad Campus briefed the Council on the existing penalties for academic dishonesty which need to be reviewed.

Decision 3425

253. The Council decided that a Committee headed by Director BUIC be formed to review and propose suitable recommendations regarding amendment in the relevant provisions of Academic Misconduct Chapter-13 (para 13.10.1 Table 10) of BUAR 2016.

254. Point to remain on agenda and progress be reported.

Action Required	Action by	Responsibility of
Implementation of the Decision	Registrar - For notification of Committee Director BUIC	Director BUIC
Statutory Documents affected:		

Closing the Meeting

255. The Chair thanked the participant again and appreciated the efforts of officials involved in conduct of Academic Council Meeting.

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

1 st Progress Report on Action Items of 34 th ACM	13 January 2020
2 nd Progress Report on Action Items of 34 th ACM	09 March 2020
Agenda Items for the 35 th ACM	09 March 2020
Schedule of 35 th ACM	7 & 8 April 2020

Dated: 23 December 2019

Zahid Majeed
Secy Academics Council

Appendage 34(3321)**COMPARISON BETWEEN BS(SCM) DEGREE PROGRAM AT PNSL AND BE (MECHANICAL / ELECTRONICS) AT PNS JAUHAR/NUST**

1. **Decision 3321 para (b):** Dean MSS is to study NUST model implemented at PNS JAUHAR/PNEC and put up detailed study report along with recommendation in next ACM. While carrying out study, issuance of same degree to civilian students also be considered
2. Detailed comparison between BS(SCM) degree program conducted at PNSL and BE (Mechanical/ Electronics) being conducted PNS JAUHAR/NUST is as under:

Phases	BS (SCM) Degree Program at PNSL	BE(ME/WE) Degree Program at PNS JAUHAR
Phase-I at PNA	03 x semesters are conducted at PNA as phase I of Training, which include military training courses along with courses of BS(SCM) degree program. Semester wise detail of BS(SCM) courses is attached at Annex A to this brief.	02 x semesters are conducted at PNA as phase I of Training, which include military training courses along with courses of BE (ME/WE) degree program. Semester wise detail of courses is attached at Annexes B and C to this brief.
Phase-II at PN Fleet	a. Internship on board ships b. Internship is mandatory for GL(S) officers, however the Fleet Board examination does not carry any weightage for award of degree	a. Attached with PN Fleet for Sea Training b. The attachment is not part of degree program and Fleet board examination does not carry any weightage for award of BE degree program.
Phase-III at PNSL/PNEC	a. The under training officers of BS(SCM) join PNSL for the period of 2.5 x years (semester IV to VIII) b. These semesters also include professional courses as part of the degree program at PNSL	The under training officers of GL ME/WE join PNEC for BE (Mechanical) and BE (Electronics) for the period of 03 x years (semester III to VIII)

3. **Duration and Induction Procedure.** The minimum duration of degree program of BS(SCM) is 4.5 years, whereas for BE Degree program the duration is 4 years. The induction criteria for civilian students at PNS JAUHAR is as per HEC specified criteria, except selected quota seats reserved for wards of Naval personnel. These civilian students carry on their studies on Campus from Semester I to Semester VIII. However, the service personnel (S/Lts) join PNS JAUHAR in semester III after completion of 02 x semester from PNA.

4. **Induction of Civilian Students.** At present, PNSL is conducting BS(SCM) degree program for PN Serving Officers only. It was discussed during last ACM that option to extend this facility to civilian students may also be studied on the same pattern as being conducted at PNEC under the auspices of NUST. For this purpose, the availability and requirement of training facilities at PNSL is discussed in ensuing paragraphs.

5. PNSL has following facilities which can also be utilized by civilian students, if enrolled.
 - a. At present 05 x class rooms are available for BS(SCM) degree program. Existing strength of student (Service Officers) is 5-7, however, the class rooms have a capacity to accommodate upto 20 students in each class.

- b. Dedicated Students Cafeteria is available for students with PNSL.
 - c. Library comprising 6152 books is available in PNSL.
 - d. Computer lab comprising 35 workstations is available in PNSL.
6. Following facilities are considered necessary to extend the degree program for civilian students:
- a. The existing faculty of PNSL needs to be upgraded through fresh inductions. In this regard Bahria University may also facilitate PNSL through attachment of BU faculty or provision of visiting faculty.
 - b. Boarding facility for civilian students is not available with PNSL, therefore PNSL will not be able to provide boarding facility to students coming from other stations.
 - c. The existing class rooms are considered insufficient to accommodate large number of students, therefore, BU may assist PNSL for construction of a dedicated academic block for conduct of BS(SCM) degree program.
 - d. The existing faculty room is a make shift cubical arrangement, the same needs to be improved and dedicated faculty staff rooms can be arranged through construction of dedicated admin block proposed above.
 - e. As per existing training mechanism, first three semesters of BS (SCM) are conducted at PNA followed by internship at PN Fleet. This civilian students of semester 1-3 will have to complete these semesters at PNSL. Similar practice is being conducted at PNEC. For this purpose, additional class rooms and additional faculty members would be required at PNSL. For conduct of internship of civilian students, BU would be requested to provide necessary facilitation in this regard.

BS(SCM) DEGREE PROGRAMMES**PHASE-I**

Semester-I		
S. No	Courses/ Subjects	Credit Hours/ Week
1.	Introduction to management	3+0
2.	Communication and inter personal skills	2+0
3.	Pakistan studies	2+0
4.	Islamic studies	2+0
5.	English literature	2+0
Total		11+0
Semester-II		
1.	Critical reasoning & logic	2+0
2.	Micro-economics	3+0
3.	Applied Maths for business I	3+0
4.	Software application in business	3+0
5.	Socio economic philosophy of Islam	3+0
Total		14+0
Semester-III		
1.	Applied Maths for Business-II	3+0
2.	Management info system	3+0
3.	Macro Economics	3+0
4.	Oral communication	3+0
5.	Organizational theory & behavior	3+0
Total		15+0

PHASE-II. Internship onboard ships**PHASE-III****SEMESTER-IV**

Semester-IV		
S. No	Course	Credit Hours/ Week
1.	Principle of economics	3+0
2.	Principles of marketing	3+0
3.	Business statistics	3+0
4.	Business communication	3+0
5.	Principles of accountings-I	3+0
6.	E Commerce	3+0
Total		18+0
Semester-V		
1.	Marketing Management	3+0
2.	Fundamental of finance	3+0
3.	Fundamental of supply chain management	3+0
4.	Statistical inference	3+0
5.	Principles of accounting-II	3+0
6.	Human resource management	3+0
Total		18+0

Semester-VI		
1.	Financial management	3+0
2.	Services marketing	3+0
3.	Operations & production management	3+0
4.	Research methods & techniques	3+0
5.	Cost & managerial accounting	3+0
6.	Business law	3+0
7.	SHE Workshop	0+0
Total		18+0
Semester-VII		
1.	Strategic management	3+0
2.	Project management	3+0
3.	Total quality management (Elective-I)	3+0
4.	Procurement management (Elective-VI)	3+0
5.	Analysis of financial statements	3+0
6.	Pakistan economy	3+0
Total		18+0
Semester-VIII		
1.	International relations & law	3+0
2.	Naval law & general regulations	3+0
3.	Freight & transportation management (Elective-IV)	3+0
4.	Logistics management (Elective-III)	3+0
5.	Applied financial management	3+0
6.	Research project	3+0
7.	Logistics & secretariat management	3+0
Total		18+0

BE(MECHANICAL) DEGREE PROGRAMMES**PHASE-I**

Semester-I		
S. No	Courses/ Subjects	Credit Hours/ Week
1.	Engineering Physics	2+1
2.	Applied Chemistry	2+1
3.	Calculus & Analytical Geometry	3+0
4.	Introduction to Computers	2+1
5.	Pakistan Studies	2+0
6.	Islamic studies/Ethical Behaviour	2+0
Total		13+3
Semester-II		
1.	Linear Algebra, Vector calculus & Tensor Analysis	2+0
2.	Thermodynamics -1	3+0
3.	Engineering Practice -1	1+1
4.	Communication & Interpersonal Skills	2+0
5.	Basic Electrical Engineering	3+1
6.	Ordinary & Partial Differential Equations	3+0
Total		14+0

PHASE-II. Attachment on board ships (not included in degree program).

PHASE-III

Semester-III		
S. No	Course	Credit Hours/ Week
1.	Complex & Fourier Analysis	(3+0)
2.	Engineering Statics	(3+0)
3.	CAED	(0+2)
4.	Thermodynamics-II	(4+0)
5.	Engineering Practice -II	(0+1)
6.	Electronics-I	(3+0)
7.	Mech Engg Lab-I	(0+1)
Total		(13-4)
Semester-IV		
1.	Mechanics of Solids-I	(3+0)
2.	Material Science & Engg	(3+0)
3.	Engineering Dynamics	(3+0)
4.	Fluid Mechanics	(4+0)

5.	Probability and Statistics	(2+0)
6.	Electronics-II	(2+0)
7.	EE/EL Engg Lab Basic Electrical Engg (10) + Electronics (30) = 40 periods	(0+1)
8.	Mech Engg Lab-II Dynamics (4) + Fluid Mech (20) + Mos -I (16) + Material Science (14)=54 periods	(0+1)
Total		(17+2)
Semester-V		
1.	Mechanics of Solids-II	(3+0)
2.	Numerical Methods	(1+1)
3.	Manufacturing Process -I	(3+0)
4.	Computer Programming	(2+0)
5.	Mech Engg Lab-III Numerical Methods(20) + MOS II (20) + M Viv (14) =54 Periods	(0+1)
6.	Mechanical Vibrations	(3+0)
7.	Heat and Mass Transfer	(3+0)
Total		(15+3)
Semester-VI		
1.	ICP Engines	(3+0)
2.	Mechanics of Machines	(3+0)
3.	Heat and Mass Transfer-II	(3+0)
4.	Control Systems	(3+0)
5.	Manufacturing processes -II	(2+0)
6.	Technical/Business Writing	(2+0)
7.	Engg Economics or Econ Analysis	(2+0)
8.	Mech Engg Lab IV ICE (8)+ ht(18) + Cont (18) =44 periods	(0+1)
9.	Steam Turbines	(1+0)
Total		(19+1)
Semester-VII		
1.	Robotics and Automation	(3+0)
2.	Ref & Air Conditioning	(3+0)
3.	Gas Turbine	(3+0)
4.	Instr & Measurement	(3+0)
5.	Mech Engg Lab V Inst & M(6) +Robot & Auto (24) + GT (10)=40	(0+1)
6.	Entrepreneurship Elements of Business Engg Econ & Proj Eval	(3+0)

Minutes of 34th ACM

7.	Mech Engg Dgn Proj	(0+0)
8.	Renewable Energy	(2+0)
	Total	(17+1)
Semester-VIII		
1.	Power System Analysis Electrical Machine	(3+0)
2.	Design of Machine Elements	(3+0)
3.	Mech Engg Dgn Proj	(0+6)
4.	Mech Engg Lab+ VI CATS/ Naval Arch (20) = 20	(0+1)
5.	Engg Economics & Proj Evaluation	(2+0)
6.	Professional Ethics	(2+0)
7.	Basic Naval Architecture Computer Aided Thermal System	(2+0)
	Total	(12+7)

BE (ELECTRONICS) DEGREE PROGRAMMES**PHASE-I**

Semester-I		
S. No	Courses/ Subjects	Credit Hours/ Week
1.	Engineering Physics	2+1
2.	Applied Chemistry	2+1
3.	Calculus & Analytical Geometry	3+0
4.	Introduction to Computers	2+1
5.	Pakistan Studies	2+0
6.	Islamic studies/Ethical Behavior	2+0
Total		13+3
Semester-II		
1.	Linear Algebra, Vector calculus & Tensor Analysis	2+0
2.	Thermodynamics +1	3+0
3.	Engineering Practice +1	1+1
4.	Communication & Interpersonal Skills	2+0
5.	Basic Electrical Engineering	3+1
6.	Ordinary & Partial Differential Equations	3+0
Total		14+0

PHASE-II. Attachment on board ships (not included in degree program).

PHASE-III

Semester-III		
S. No	Course	Credit Hours/ Week
1.	Computer Aided & Engineering Drawing	(0+2)
2.	Network Analysis +I	(2+0)
3.	Algorithm & Computing	(3+1)
4.	Digital Logic Design	(3+1)
5.	Semiconductor Materials Devices & Circuits	(3+1)
6.	Complex & Fourier Transforms	(3+0)
Total		(14+5)
Semester-IV		
1.	Network Analysis +II	(2+0)
2.	Electrical Machines-II	(3+1)
3.	Electromagnetic Field Theory	(3+0)
4.	Electronic Devices and Circuits	(3+1)
5.	Microprocessor Architecture & Programming	(3+1)
6.	Engineering Mechanics	(3+0)
7.	Probability and Statistics	(2+0)
Total		(19+3)

Semester-V		
1.	Integrated Circuits	(3+1)
2.	Wave Propagation and Antennas	(2+1)
3.	Instrumentation and Measurement	(3+0)
4.	Signals and Systems	(3+0)
5.	Microcontroller Based Systems	(2+1)
6.	Numerical Methods	(1+1)
Total		(14+4)
Semester-VI		
1.	Control Systems	(3+1)
2.	Power Electronics	(3+1)
3.	Communication System	(3+1)
4.	Microwave Engineering	(3+1)
5.	Technical/Business Writing	(1+0)
Total		(13+4)
Semester-VII		
1.	Data Communication & Networking	(3+1)
2.	DSP & Filter Design	(3+1)
3.	Engineering Economics	(2+0)
4.	Elective – I	(3+1)
5.	Elective – II	(3+1)
6.	Design Project	(0+0)
Total		(14+4)
Semester-VIII		
1.	Planning & Engineering Project Management	(2+0)
2.	Professional Ethics	(1+0)
3.	Principles of Digital Communication	(3+1)
4.	Elective – III	(2+0)
5.	Design Project	(0+6)
Total		(8+7)

Appendage 34(3330)



Bahria University
Discovering Knowledge

RBU/344/2-78

See Distribution

10 June 2019

SOP - IMPLEMENTATION OF ACM APPROVED ACADEMIC PROGRAM ROADMAPS BY CONSTITUENT UNITS

Reference:

A. BUHO letter DE/502/2019/64 dated 5 Apr 19.

1. SOP for implementation of ACM approved academic Roadmaps by all CUs of BU was issued vide reference. The same has been reviewed to make it more comprehensive and is attached at Annex A for strict compliance by all concerned.

2. Letter at reference 'A' be treated as cancelled.

A handwritten signature in blue ink.

MUHAMMAD HISHAM SI(M)
Commodore (Retd)
Registrar

Annex:

A. SOP for Uploading new/revised academic program roadmaps

Distribution:

Internal:

Rector's Sectt - for info
Pro-Rector
All Deans
All Directors BUHO

External:

DG BUIC
DG BUM&DC
DG BUKC
Director BULC
Director BUIC
Director BUKC
DD (Regulation & Statutes)

Annex A to BUHO letter

RBU/344/ 278 dated 10 June 2019

SOP FOR UPLOADING NEW/ REVISED ACADEMIC PROGRAM ROADMAPS BY ALL CUs

1. After each ACM, AA Dte is to upload the amended/ new academic road-map(s) on CMS and BU website with the assistance of IT Dte. In parallel, Exams Dte is to upload the amended/ new roadmap in its own database and forward compliance to DAA.
2. Prior commencement of each Semester, AA Dte is to upload roadmaps for new inductions/ batches with the assistance of IT Dte. Thereafter, courses are to be offered Program wise/ Section Wise/ Shift wise at Campus (Departmental) level based on updated roadmaps of respective batches.
3. QA Deptt of each CU is to verify implementation of amended/ new academic roadmap(s) approved in the last ACM during 2nd week of each semester and ensure that courses offered by departments are according to their respective roadmaps. Confirmation of the same is to be subsequently submitted to BUHO QA Dte, AA Dte and Exams Dte.
4. To avoid duplication of course codes/ titles in amended/ new road maps, course titles and credit hours for a new course(s) are to be assigned by respective HODs in consultation with respective Deans as per course code scheme. The nomenclature so prepared is to be forwarded to BUHO Exams Dte prior to forwarding the proposal to AA Dte for inclusion in the ACM. Exams Dte is to then finalize the suitable course codes and forward the same to respective HOD for timely finalization in ACM agenda item. Thereafter, sponsoring HOD is to process approval of the new/ revised course(s) along-with the course codes through respective Faculty Board of Studies, for approval of Competent Authority/ Academic Council.
5. In parallel to the above stated, Admissions Dte is to include the new/revised academic program roadmap and nomenclature of each offered academic program/ courses in BU's Prospectus of each year strictly as per the nomenclature contained in the Unified Course Code Handbook/ last ACM MoM (whichever is the latest).

BEE CURRICULUM UPDATING TO MEET THE NEEDS OF INDUSTRY 4.0 REVOLUTION
(COURSE OUTLINES)

Course Title: Big Data Analytics

Course Code: CSC 488

Credit Hours: 3+0

Prerequisite: Programming Fundamentals

COURSE LEARNING OUTCOMES (CLOs):

By the end of the course, students should be able to:

CLO 1	Know the fundamental concepts, principles and approaches to description of the Big Data Landscape.
CLO 2	Use one of the most common frameworks, Hadoop.
CLO 3	Solve problems in the professional field on the basis of analysis and synthesis.

MAPPING OF CLOs TO PLOs (PROGRAM LEARNING OUTCOMES):

PLOs	CLOs		
	CLO 1	CLO 2	CLO 3
PLO 01 Engineering Knowledge	✓		
PLO 02 Engineering Problem Analysis			
PLO 03 Designing and Development			
PLO 04 Investigation			
PLO 05 Modern tool usage		✓	
PLO 06 Engineer and Society			
PLO 07 Environment and sustainability			
PLO 08 Professionalism and Ethics			
PLO 09 Communication			
PLO 10 Individual and Team Work			
PLO 11 Life-long learning			✓
PLO 12 Project Management			

Contents:

Big Data introduction

- Big data: definition and taxonomy
- Big data value for the enterprise
- Setting up the demo environment
- First steps with the Hadoop “ecosystem”.

The Hadoop ecosystem

- Introduction to Hadoop
- Hadoop components: MapReduce/Pig/Hive/HBase
- Loading data into Hadoop
- Handling files in Hadoop
- Getting data from Hadoop

Querying big data with Hive

- Introduction to the SQL Language
- From SQL to HiveQL
- Introduction to HIVE e HIVEQL
- Using Hive to query Hadoop files

Big data & Machine learning

- Big Data & Machine Learning
- Machine learning tools
 - Spark & Spark ML
 - H2O
 - Azure ML

Recommended Software

- Apache Hadoop

Text Book:

- EMC Education Services (2015), *Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data*, Wiley.

Reference Books:

1. Provost, F., & Fawcett, T. (2013). *Data Science for Business: What You Need to Know about Data Mining and Data Analytic Thinking*, O'Reilly Media.
2. Foreman, J.W. (2013). *Data Smart: Using Data Science to Transform Information into Insight*, Wiley.

Course Title: Introduction to Cloud Computing

Course Code: CSC 410

Credit Hours: 3+0

Prerequisite: None

COURSE LEARNING OUTCOMES (CLOs):

By the end of the course, students should be to:

CLO 1	Identify the advantages and disadvantages of various cloud computing platforms, security and privacy issues in cloud computing.
CLO 2	Analyze the performance, scalability, and availability of the underlying cloud technologies & software.
CLO 3	Solve a real-world problem using cloud computing through group collaboration.

MAPPING OF CLOs TO PLOs (PROGRAM LEARNING OUTCOMES):

	PLOs	CLOs		
		CLO 1	CLO 2	CLO 3
PLO 01	Engineering Knowledge	✓		
PLO 02	Engineering Problem Analysis		✓	
PLO 03	Designing and Development			
PLO 04	Investigation			✓
PLO 05	Modern tool usage			
PLO 06	Engineer and Society			
PLO 07	Environment and sustainability			
PLO 08	Professionalism and Ethics			
PLO 09	Communication			
PLO 10	Individual and Team Work			
PLO 11	Life-long learning			
PLO 12	Project Management			

Content:**Cloud Computing**

Key aspects of cloud computing(cc), Cloud system, Services offered by cc, Old IT infrastructure vs. cloud Web 1.0 to 4.0, SAAS, PAAS and IAAS, Public, Private and Hybrid Cloud.

CRM Introduction

Introduction to CRM, CRM metrics, technologies & Channels.

Salesforce Introduction

Salesforce terminologies, logging into Salesforce, Salesforce user creation and terms, Database.com, Sales Cloud Overview, Editions of Salesforce, Types of Salesforce sandbox, Salesforce development, Tabs, objects and Fields.

Warehouse App

Warehouse App, Custom fields and Objects, Field types (DT) and Tabs.

Relationships, Formulas & Validation

Master-Detail, Lookup and Record Format, Formula, Roll Up Summary and Improve Validation Rule.

Workflow

What is workflow, Evaluation Criteria, Rule Criteria, Salesforce navigation term, Records, Salesforce navigation term – Sidebar, Salesforce.com and Force.com, Database.com, Sales Cloud Overview, Service cloud Overview, Editions of Salesforce, Types of Salesforce sandbox, Salesforce development, Tabs, objects and Fields.

Warehouse App and Relationships

Create Warehouse App, Custom Objects, Custom fields, Create records, Field types (DT). Master-Detail, Lookup, Record Format.

Formulas & Validation

Formula, Roll Up Summary, Improve Validation Rule.

Text Books:

1. Rafaels, R. J. (2015). Cloud Computing: From Beginning to End, CreateSpace Independent Publishing.
2. Marinescu, D.C. (2013). Cloud Computing Theory and Practice, Elsevier.
3. Erl, T., Puttini, R., & Mahmood, Z. (2013). Cloud Computing: Concepts, Technology & Architecture, Prentice Hall.

Course Title: Artificial Intelligence

Course Code: CSC 412

Credit Hours: 3+0

Prerequisite: Object Oriented Programming.

COURSE LEARNING OUTCOMES (CLOs):

By the end of the course, students should be able to:

CLO 1	Understanding and Recognition of an AI-problem.
CLO 2	Model AI-problems and point out an appropriate solution (for example expert systems, search algorithms, learning).
CLO 3	Describe and use search methods, expert systems, statistical methods and simple methods for learning, discuss different definitions of AI, and relate those to the history of AI.

MAPPING OF CLOs TO PLOs (PROGRAM LEARNING OUTCOMES):

	PLOs	CLOs		
		CLO 1	CLO 2	CLO 3
PLO 01	Engineering Knowledge	✓		
PLO 02	Engineering Problem Analysis			
PLO 03	Designing and Development		✓	
PLO 04	Investigation			
PLO 05	Modern tool usage			✓
PLO 06	Engineer and Society			
PLO 07	Environment and sustainability			
PLO 08	Professionalism and Ethics			
PLO 09	Communication			
PLO 10	Individual and Team Work			
PLO 11	Life-long learning			
PLO 12	Project Management			

Content:

- Introduction to AI, history of AI, course logistics, Intelligent agents, uninformed search, Heuristic search, A* algorithm, Adversarial search, games, Constraint Satisfaction Problems.
- Machine Learning: Basic concepts, linear models. Perceptron, K nearest neighbors, Machine Learning: advanced models, neural networks. SVMs, decision trees and unsupervised learning. Markov decision processes and reinforcement learning. Logical Agent, propositional logic and first order logic, AI applications (NLP), AI applications (Vision/Robotics).
- Introduction to Deep Learning, Convolution neural network, Recursive Neural Network,

Text Book:

1. Stuart Russel and Peter Norvig, Artificial Intelligence, A modern Approach, 3rd Edition

Reference Books:

1. Michael J. Wooldridge, Reasoning about Rational Agents.
2. Jack Minker, Logic Based Artificial Intelligence.
3. Steven Michael LaValle, Planning Algorithms

Course Title: Industrial Internet of Things

Course Code: EET 461

Credit Hours: 3+0

Prerequisite: Object Oriented Programming.

COURSE LEARNING OUTCOMES (CLOs):

By the end of the course, students should be able to:

CLO 1	Understanding of pervasive connectivity, storage, and computation to give different IoT based solutions for real world systems.
CLO 2	Students will acquire knowledge necessary for remote monitoring and control of industrial manufacturing/operations facilities through experiential learning as well as remote health monitoring and emergency notification systems, and transportation systems.
CLO 3	Implementation of Multi-Node IoT Solutions and analyze data in the Cloud.
CLO 4	Design of IoT based solutions utilizing IoT sensors, data collection in the Cloud.

MAPPING OF CLOs TO PLOs (PROGRAM LEARNING OUTCOMES):

PLOs		CLOs			
		CLO 1	CLO 2	CLO 3	CLO 4
PLO 01	Engineering Knowledge	✓	✓		
PLO 02	Engineering Problem Analysis				
PLO 03	Designing and Development				✓
PLO 04	Investigation				
PLO 05	Modern tool usage			✓	
PLO 06	Engineer and Society				
PLO 07	Environment and sustainability				

PLO 08	Professionalism and Ethics				
PLO 09	Communication				
PLO 10	Individual and Team Work				
PLO 11	Life-long learning				
PLO 12	Project Management				

Content:**Internet of Things (IoT)**

- What Is the Internet of Things?
- Machine to Machine / User-less Communication
- Common Use Cases
- Components of an IoT Solution
- Open Source and Commercial Examples
- Competing Standards for IoT
- IoT specialization: Industrial, Medical/Healthcare, Automotive, Energy/Utilities, Financial

Acquiring Data

- Traditional Data Storage
- Analog and Digital I/O Basics
- Sensors and Data Collection Points
- Embedded Platforms / Microcontrollers
- Software Development
- Device Security: Physical and Logical
- Connectivity Options
- Connecting Sensors to the Cloud
- Scaling Number of Sensors

Utilizing Data

- Collecting and Storage of IoT Sensor Data
- Data Aggregation
- Processing IoT Data
- Privacy and Security
- Analysis and Visualization of Data
- Cloud and IoT
- Big Data and IoT
- Use Cases for IoT Data

Implementing IoT

- Embedded Operating Systems
- Linux and Windows-Based IoT
- Cloud-based Data Collection
- On-Going IoT Operations

IoT Analytics

- ETL (Extract-Transform-Load)
- Combining IoT Data with Static Data
- Scripting and Programming with IoT Data

- Machine Learning / Artificial Intelligence

Bringing It Together

- IoT Strategies
- IoT Governance and Management Strategies

What's Next in IoT?

Text Book:

1. "The Internet of Things: Enabling Technologies, Platforms, and Use Cases", by Pethuru Raj and Anupama C. Raman (CRC Press).

Reference Book:

1. "Internet of Things: A Hands-on Approach", by Arshdeep Bahga and Vijay Madisetti (Universities Press).

Course Title: Sales and Marketing Strategies for Engineers

Course Code: MGT 426

Credit Hours: 2+0

Prerequisite: None

COURSE LEARNING OUTCOMES (CLOs):

By the end of the course, students should be to:

CLO 1	Understand the fundamentals of marketing strategies & matrix.
CLO 2	Identify new marketing imperatives intelligence, interfaces & integration.
CLO 3	Gain a clear understanding of the role in supporting the sales and marketing of company's products and services.
CLO 4	To understand how to develop a close business relationship with clients

MAPPING OF CLOs TO PLOs (PROGRAM LEARNING OUTCOMES):

PLOs	CLOs			
	CLO 1	CLO 2	CLO 3	CLO 4
PLO 01 Engineering Knowledge				
PLO 02 Engineering Problem Analysis				
PLO 03 Designing and Development				
PLO 04 Investigation		✓		
PLO 05 Modern tool usage				
PLO 06 Engineer and Society	✓			
PLO 07 Environment and sustainability				
PLO 08 Professionalism and Ethics			✓	
PLO 09 Communication				
PLO 10 Individual and Team Work				

PLO 11	Life-long learning				✓
PLO 12	Project Management				

Course Outline:

The marketing engineering approach

The marketing decision environment, Basic economic concepts for analyzing marketing actions, Tools for marketing engineering, Business value of marketing engineering.

Customer value assessment and valuing customers

The concept of customer value, approaches to measuring customer value, Valuing customers and customer lifetime value.

Segmentation and targeting

The segmentation, targeting, and positioning approach. Segmentation analysis, traditional segmentation. Targeting individual customers, implementation barriers and solutions.

Positioning

Positioning through brand linkages, positioning using perceptual maps, combining perceptual and preference mapping, translating preference to choose, reverse mapping (from map to raw data) incorporating price as an attribute uses and limitations of perceptual and preference maps.

Forecasting

Forecasting methods, new product forecasting models and their methods to choose.

New product and service design

The new product development process, models for idea generation and evaluation, conjoint analysis for product design.

The marketing mixes

Pricing decisions, resource allocation and the marketing communications and promotions mix, sales promotions: types and effects.

The digital, online revolution in marketing

The evolution of online technologies, online advertising versus traditional advertising, search analytics, social listening and text analysis.

Harvesting value from marketing engineering

Online Analytical Processing (OLAP), Models Offered as Web Services, Intelligent Marketing Systems.

Text Book:

1. Principles of Marketing Engineering and Analytics 3rd Edition by Gary Arvind Arnaud. (Decision Pro, Inc.)

Revision of Curriculum - MS (CE) Program

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. Digital Logic Design or equivalent
2. Computer Architecture and Organization or equivalent
3. 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 525	Digital Signal Processing & Applications	3
2	CEN 520	Advanced Computer System Architecture	3
3	CEN 624	Advanced Digital Design	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	CSC 720	Advanced Operating Systems	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

***New electives have been added**

Course Outlines

Course Title: Digital Signal Processing & Applications

Course Code: CEN 525

Credit Hours Theory: Three (3)

Course Outline:

This course on Digital Signal Processing will discuss topics including Discrete-time Signals, Input-Output relationships, Discrete-Time Networks, Sampling of Signals, Discrete Fourier Transform & Fast Fourier Transform (FFT) Algorithms, IIR, FIR Filters, Design of signal-processing system, Advanced digital filter design, Multi-rate DSP, adaptive filter theory, FFT and DSP applications.

Recommended Book:

Oppenheim, A.V., Schafer, R.W, "Discrete-Time Signal Processing", Second Edition, Prentice-Hall, New Jersey, 1999, ISBN 0-13-083443-2.

Reference Books:

S. K. Mitra, "Digital signal processing: A computer based Approach, 4th edition", McGraw-Hill

Course Title: Advanced Computer System Architecture

Course Code: CEN 520

Credit Hours Theory: Three (3)

Course Outline:

This course is a study of the evolution of computer architecture and the factors influencing the design of hardware and software elements of computer systems. Topics may include: instruction set design; processor micro-architecture and pipelining; cache and virtual memory organizations; protection and sharing; I/O and interrupts; in-order and out-of-order superscalar architectures; VLIW machines; vector supercomputers; multithreaded architectures; symmetric multiprocessors; and parallel computers.

Recommended Book:

Hennessy, J. L., and D. A. Patterson. "Computer Architecture: A Quantitative Approach", 3rd edition

Reference Books:

W. Stallings "Computer Architecture and Organization" 10th edition, McGraw-Hill

Course Title: Advanced Digital Design

Course Code: CEN 624

Credit Hours Theory: Three (3)

Course Outline:

This course is dedicated to advanced topics in digital system design including Application Specific Integrated Circuits, System on Chip (SoC), Validation and Verification, Simulation, Hardware acceleration, Hardware Descriptive language (HDL), from specification to model, Application-specific instruction-set processor (ASIP) design, Field programmable gate array (FPGA), Hardware Design Methodologies, EDA (Electronic Design Automation), Programmable logic devices:

PLA, PAL, GAL, CPLD and FPGA.

Recommended Book:

W. Wolf, "FPGA based System Design", latest edition, Prentice Hall

Reference Books:

S.A.Khan, "Digital Design of Signal Processing System: A Practical Approach", Wiley

Course Title: Advanced Big Data Analytics

Course Code: SEN 762

Credit Hours Theory: Three (3)

Course Outline:

This course shall provide the fundamental knowledge to equip students being able to handle those challenges. This discipline inherently involves many fields. Because of its importance and broad impact, new software and hardware tools and algorithms are quickly emerging. A data scientist needs to keep up with these ever changing trends to be able to create a state-of-the-art solution for real-world challenges.

This Big Data Analytics course shall first introduce the overview applications, market trend, and the things to learn. Then, students shall be introduced fundamental platforms, such as Hadoop, Spark, and other tools, such as IBM System G for Linked Big Data. Afterwards, the course will introduce several data storage methods and how to upload, distribute, and process them. This shall include HDFS, HBase, KV stores, document database, and graph database. The course will go on to introduce different ways of handling analytics algorithms on different platforms. Then, students shall introduce visualization issues and mobile issues on Big Data Analytics. Students will then have fundamental knowledge on Big Data Analytics to handle various real-world challenges.

Afterwards, the course will zoom in to discuss large-scale machine learning methods that are foundations for artificial intelligence and cognitive networks. The course will discuss several methods to optimize the analytics based on different hardware platforms, such as Intel & Power chips, GPU, FPGA, etc. The lectures will conclude with overview of the future challenges of Big Data, especially on the ongoing Linked Big Data issues which involves graphs, graphical models, spatio-temporal analysis, cognitive analytics, etc.

Given large amount of data, one fundamental scientific challenge is how to develop efficient and effective computational tools to analyze the data, revealing insight and make predictions. Data analytics is the science of achieving these goals. It is an inter disciplines of machine learning, data mining, statistics, and so on. This class aims to provide an overview of advanced machine learning, data mining and statistical techniques that arise in data analytic applications. In this class, you will learn and practice advanced data analytic techniques, including: parallel algorithms, online algorithm, locality sensitive hashing, topic modelling, structure learning, and time-series analysis.

Recommended Books:

C. Bishop, "Pattern Recognition and Machine Learning", Springer 2007.

All of statistics: a concise course in statistical inference. Larry Wasserman. Springer, 2004

Course Title: Deep Learning

Course Code: DSC 707

Pre-Requisite: None

Course Description:

The objective of this course is to acquaint the students with the state of the art deep learning techniques to solve different learning problems. Students will learn to design as well as implement deep neural network architectures (through hands on tasks) to solve various recognition problems.

Salient contents of the course are: Introduction to neural networks, activation functions and back propagation; Convolutional Neural Networks: History, Convolution, Pooling, CNNs for classification, Deep learning Software, CNN Architectures; Sequence Modeling: Recurrent and Recursive Nets: Long Short Term Memory models and variants, Language modeling and image captioning, Unsupervised learning: Restricted Boltzmann Machines and Auto encoders; Case Studies.

Reference Books:

Goodfellow, I., Bengio, Y., & Courville, A. (2016). Deep Learning (Adaptive Computation and Machine Learning series), The MIT Press, 2016.

Patterson, J., & Gibson, A. (2017). Deep Learning: A Practitioner's Approach, O'reilly

Course Title: Computer and Network Forensics

Course Code: ISC 737

Pre-Requisite: None

Objectives:

The objectives of this course are to study computer and network security principles and practices for crime investigations and other legal actions. The students will learn how to use forensically-sound methodologies and software to acquire admissible electronic evidence with coverage areas of networks, computer, email forensics and cell phone forensics.

Contents:

Forensics Essentials and Criminalistics, Essentials of OS and Networking (Review), Forensic Modelling and Principles, Forensic Duplication, Forensics Analytics, File Carving, Cyber Forensics Tools and the Testing Thereof, Email forensics, Mobile Device Forensics, Network Surveillance and Accountability, Network Attack Trace back and Attribution, Multicast Fingerprinting, Multimedia Forensics, Intrusion and Online Frauds Detection, Steganography & Steganalysis, Anonymity/ Pseudonymity/ P3P, Cyber Law, Security and Privacy Policies and Guidelines, Ethical issues, Court Testimony and Report Writing Skills.

Text Books:

Guide to Computer Forensics and Investigations by Bill Nelson

Network Forensics: Tracking Hackers through Cyberspace by Sherri Davidoff

Reference Books:

Computer Forensics: Investigating Network Intrusions and Cyber Crime published by EC-Council Press

Computer Forensics: Principles and Practices by Linda Volonino

Course Title: Cloud Computing

Course Code: CSC 781

Pre-Requisite: None

Objectives:

Understanding the systems, protocols and mechanisms to support cloud computing, Application architectures for cloud computing, understanding the hardware necessary for cloud computing and design and implementation of cloud computing application

Contents:

This course introduces students to the cloud and the computing on the cloud. Initially, the focus is on the technology context, i.e. multi-core architectures, virtualization, parallel computing models and big data storage. Next, famous cloud computing models including Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS) are studied with the help of Amazon AWS (IaaS), Microsoft Azure (PaaS) and Google App Engine (SaaS). In addition to computing models, Data and computation models, e.g. MapReduce, are an important part of this module. The theoretical concepts are explained with hand-on experience of cloud platforms supported by case studies. The course concludes with an insight into the cloud risk areas including risks with service provider, technical risks, security issues, connectivity issues, etc. and research work in these areas is also discussed.

Text Books:

Handbook of Cloud Computing, Borko Furht. Springer, 2010.

Cloud Computing: SaaS, PaaS, IaaS, Virtualization, Business Models, Mobile, Security, and More, Kris Jamsa Jones & Bartlett Publishers, 2012

Reference Books:

Cloud Computing and SOA: Convergence in your enterprise, David Linthicum. Addison Wesley, 2009

Course Name: Advanced Cryptography

Course Code: CSC 704

Credit Hours: 3

Course Description:

This course focuses on modern cryptography. It includes building blocks such as one way functions, pseudo random number generation, encryption, and digital signatures, protocols and applications such as information security, secure network communication, secure cloud computing, and privacy preserving data analytics. Fundamental security properties, cryptographic constructions, and their applications are emphasized.

Reference Books:

Katz, J., Lindell, Y. (2014). Introduction to Modern Cryptography, 2nd Edition, CRC Press.

Ferguson, N., Schneier, B., & Kohno, T. (2011). Cryptography Engineering: Design Principles and Practical Applications, by Niels Ferguson, Bruce Schneier and Tadayoshi Kohno, Wiley Publishing Inc.

Revision of Curriculum - MS Telecom and Networks Program (MS (T&N)

Program Mission

The mission of this program is to produce professionals in the field of telecom and networking who are not only adept with the modern-day technology but also abreast with the pace of ever expanding knowledge.

Program Objectives

The key objectives of the MSTN program include the following.

1. Demonstrate a broad knowledge of telecom and networking and a focused understanding of their area of expertise.
2. Apply their knowledge and analytical skills to create effective and novel solutions to both practical and research problems.
3. Adapt to rapidly changing technology and engage in life-long learning.

Program Learning Outcomes

Students receiving MS degree in Telecom and Networking should be able to:

1. Ability to apply the knowledge and skills acquired during the program to solve practical problems in the fields of Telecommunications and networking.
2. Acquaintance with the latest tools and technologies.
3. Ability to communicate effectively in written and oral form.
4. Ability to pursue continuous professional development.
5. Ability to work on practical and research-based problems collaboratively as well as independently.

Eligibility Criteria

- 4 years bachelor's degree in BS/BCE/BE/B.Sc (Hons) in CS/SE/CE/IT, from HEC recognized university and minimum CGPA 2.5/4.0 or equivalent as per BU rules

OR

- MCS/M.Sc. (CS) degree with minimum CGPA 2.5/4.0 or equivalent percentage.
- NTS GAT/GRE (General)/ University Test passed with 50% marks.

DISTRIBUTION OF CREDIT HOURS

Category	Credit Hours
Core Courses	15
University Requirement	3
Elective Courses	6
Thesis	6
Total credit hours	30

Roadmap

Course Code	Course Title	Credits
Semester 1		
ESC 701	Research Methodology	3
EET 511	Digital Communication Systems	3
EET 520	Network Administration and Management	3
	Total	9
Semester 2		
ISC 512	Computer and Network Security	3
EET 556	Mobile Communications and Networking	3
	Elective-I	3
	Total	9
Semester 3		
EET 519	Distributed Networking	3
	Elective-II	3
ESC 502/Elective Code	Thesis/Elective-III	3
	Total	9
Semester 4		
ESC 502(Continued)/Elective Code	Thesis/Elective-IV	3
	Total	30

List of Courses

SNo.	Course Code	Course Title	Credits
Core Courses			
1.	ISC 512	Computer and Network Security	3
2.	EET 556	Mobile Communications and Networking	3
3.	EET 511	Digital Communication Systems	3
4.	EET 519	Distributed Networking	3
5.	EET 520	Network Administration and Management	3
University Requirement			
1.	ESC 701	Research Methodology	3
Electives			
1.	ESC 502	Thesis	3+3
2.	EET 710	Advance Computer Networks	3
3.	EET 523	Communication System Analysis and Design	3
4.	EET 549	Advanced Satellite Communication	3
5.	EET 560	Telecommunication Network Management	3
6.	EET 703	DSP Application in Telecommunication	3
7.	EET 705	Broadband Technologies and Components	3

8.	EET 706	Advanced Optical Fiber Networks	3
9.	EET 707	Telecommunications Business Environment	3
10.	EET 717	Network Planning and Evaluation	3
11.	EET 751	Antenna and Microwave Engineering	3
12.	EET 553	Information Theory and Coding	3
13.	EET 756	Telecommunication Switching Systems	3
14.	EET 765	Radio Frequency Engineering	3
15.	CSC 704	Advanced Cryptography	3
16.	CSC 708	Advanced Simulation and Modeling	3
17.	CSC 709	Detection and Estimation Theory	3
18.	CSC 757	IP Multimedia System	3
19.	EET 702	Advanced Network Security	3
20.	SEC 604	Blockchain Technology	3
21.	EET 752	IoT ARCHITECTURE AND PROTOCOLS	3
22.	EET 753	PRIVACY AND SECURITY IN IoT	3

Computer and Network Security	
Course Code:	ISC 512
Pre-Requisite:	None
Objectives	The course will provide an optimal description of the concepts, methods, principles and applications of computer network security in particular, and cyberspace security in general. The understanding give awareness regarding security situations based on a constant security threat, the core and best practices their solutions currently in use. It is an essential security course for students, practitioners in networks, and professionals who develop and maintain secure computer network systems.
Contents	Computer and network security essentials, Network Security: security attacks, TCP/IP & OSI model, security services, threats in networks, security in networks, data security, integrity measures, message authentication code, user authentication, basics of symmetric and public key cryptosystems, transport level security, SSL, TLS, HTTPS, network security measures: firewalls and IDS, ACLs and capabilities, Access control models, Computer Security: Programming-Language Security, Buffer-overflow attacks, defenses and counterattacks, SQL injection, web security (XSS/CSRF attacks), Web attacks and defenses, Privacy/Anonymity: Database privacy.
Text Books:	Guide to Computer Network Security 3 rd edition, Joseph Migga Kizza ,Springer, 2018. Elementary Information Security 2 nd edition, Richard E. Smith, 2017, ISBN: 978-1284055931
Reference Books:	Network Security: The Complete Reference, McGraw Hill Professional, 2015. Guide to Computer Network Security Computer Communications and Networks Kizza, Joseph Migga, Springer, 2015, ISBN 978-0-387-25228-5 Security in Computing, Fourth Edition, Charles P. Pfleeger and Shari P. Pfleeger, Pearson Education, 2011

Mobile Communication and Networking	
Course Code:	EE5 556
Credit Hours:	3+0
Prerequisites:	
Objectives:	<p>Through a series of intensive lectures the course aims to:</p> <ul style="list-style-type: none"> - Understand the basics of Mobile communications & the use of wireless technologies in telecom industry. - To understand basic wireless channel models and implement the functionality of wireless systems. - To have a comprehensive knowledge of cellular mobile technologies in different applications. - To learn the latest and future mobile and wireless technologies and their applications in everyday life.
Course outline:	<p>This postgraduate course provides an in-depth study of principles, architectures, protocols, and modeling techniques for mobile wireless networks. The course aims at equipping postgraduate students with not only a solid foundation and the state-of-the-art knowledge in a wide spectrum of wireless communications techniques and protocols, but also the rigorous analytical capabilities to evaluate the performance of complex mobile wireless systems and networks. As a research-oriented class, this course will also introduce students to the emerging and hot topics in mobile wireless networking and mobile computing research. The course will start with an introduction of the fundamental architectures and principles of mobile and wireless networks and their relationships with the backbone Internet. This is followed by the detailed examinations of a number of most recently developed mobile wireless networking technologies and architectures. Several types of widely employed mobile wireless networks and research topics are investigated in-depth as the further applications of the newly developed wireless networking techniques. The course material consists primarily of the classic and recent technical papers published on major wireless/wired networking journal and conferences and the referenced (recommended, but not required) text books. The course also aims at introducing new graduate students to research, as well as exploits potential topics for MS comprehensive projects and PhD research directions.</p>
Resources:	<p>Classic and Recent selected research papers and the referenced (recommended but not required) text books are as follows:</p> <ol style="list-style-type: none"> (1) Emerging Wireless Communication and Network Technologies: Principle, Paradigm and Performance 1st ed. 2018 Edition by Karm Veer Arya (Editor), Robin Singh Bhaduria (Editor), Narendra S. Chaudhari (Editor) (2) Stallings, Wireless Communications and Networks, Prentice Hall (3) Gordon L. Stüber: "Principles of Mobile Communication", Kluwer Academic Publishers, Third edition 2012. (4) Lee, William C. Y., Mobile Communication Engineering (5) Parsons, J.D., Mobil Radio Propagation Channel
Digital Communication System	
Course Code:	EET 511

Credit Hours:	3+0
Prerequisites:	Signal and System, Communication system
Objectives:	This course provides extensive knowledge to students about digital communication i.e. coding, correlation, modulation and demodulation, system design, interference and much more about mobile, fixed and satellite communication systems.
Course outline:	Introduction to Digital communications, signal and spectra, baseband modulation, baseband demodulation, bandpass modulation and demodulation, channel coding, source coding
Resources:	<ul style="list-style-type: none"> • Digital Communications, John. G. Proakis, McGraw-Hill, 5th edition, 2008. • Digital Communications: Pearson New International Edition: Fundamentals and Applications, Bernard Sklar, 2013. • Digital Communication, Barry, John R., Lee, Edward A., Messerschmitt, David G, third edition 2004. • Communications Systems, J.S.Chitode, 2014.
Distributed Networking	
Course Code:	EE 519
Credit Hours:	3+0
Prerequisites:	Advance Networking
Objectives:	This course is design to teach how distributed systems are designed and implemented in real systems and provides detail on topics like communication, replication, fault systems, tolerance, and security.
Course outline:	Introduction to distributed systems, Consistency and replication, Fault tolerance and security, Middleware models, Object-based systems, Document-based systems, Distributed file systems and coordination-based systems, Recent Internet and Web protocols, Caching and replication,
Resources:	<ul style="list-style-type: none"> • Tanenbaum, Andrew S., and Maarten Van Steen. <i>Distributed systems: principles and paradigms</i>. Prentice-Hall, 2007. • Culler, David, Jaswinder Pal Singh, and Anoop Gupta. <i>Parallel computer architecture: a hardware/software approach</i>. Gulf Professional Publishing, 1999. • Coulouris, George F. "Distributed systems: concepts and design/George Coulouris...[et al.]." (2012).
Network Administration and Management	
Course Code:	EET 520
Credit Hours:	3+0
Prerequisites:	Computer Networks
Objectives:	The objectives of the course are to give an insight into the network management concepts and implementation of these concepts.
Course outline:	The Scope of Systems and Network Administration, System Components and their Management, Operating Systems: Windows and Unix Variants, includes File Systems and Standards (UFS, NFS, NTFS), Processes and Job Control, Privileged, User and Group Accounts, Logs and Audits, Systems Performance Tuning, Privileged, User and Group Accounts, Logs and Audits, Systems Performance Tuning, Booting and Shutting down of an Operating System,

	Formatting, Partitioning and Building a File System, File System Layout, Concept of swap space, Cloning Systems, Process Management and Monitoring; (Scheduling Processes, Killing/Stopping processes, Restarting a Process, Monitoring Process Activity, Maintaining Log Files, File System Repair, Backup and Restoration, Introduction to Network Administration Approaches, TCP/IP Protocol Stack, Addressing and Subnetting : Fixed Vs Variable Masks, VLAN Principles and Configuration, Routing Concepts; (Static and Dynamic Routing, Routing Protocols: RIP, OSPF, BGP,
Resources:	1. Limoncelli, Thomas A., Christina J. Hogan, and Strata R. Chalup. <i>The practice of system and network administration</i> . Pearson Education, 2007. 2. Hunt, Craig. <i>TCP/IP network administration</i> . Vol. 2. " O'Reilly Media, Inc.", 2002.
Research Methodology	
Course Code:	ESC 701
Credit Hours:	3+0
Prerequisites:	None
Objectives:	This course is aimed at providing the students with an ability to undertake postgraduate level research and an appreciation of relevant ethical and professional issues. After completing this course, students will be able to: Formulate research questions and carry out research investigations, Identify various sources of information and critically analyze the collected information, Identify and apply appropriate research methods in order to plan, conduct and evaluate their research, Effectively report/publish the results of research activities and Develop and deliver presentations to disseminate research findings.
Course outline:	Introduction to research, Qualitative and Quantitative research, The scientific method of research, Choosing a research problem, Choosing a research advisor, Literature Review – Conducting and writing, Formulating the research question, Identifying variables and generating hypothesis, Research Design/Methodology, Information gathering and data collection, Data representation, analysis and interpretation, Writing a research proposal, Ethics of research – Plagiarism and Intellectual property rights, Organizing and managing conferences and workshops, Writing research papers/Reviewing research papers, Planning and delivering scientific presentations, Writing thesis/dissertations
Resources:	1. <i>Research Methodologies – A step by step guide for beginners</i> , Ranjit Kumar, fifth edition 2019. 2. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches Fifth Edition by <u>John W. Creswell</u> (Author), <u>J. David Creswell</u> (Author), 2018 3. <i>How to Research</i> , L. Blaxter, C. Hughes, M. Tight, 4 th Edition, 2010.

Advanced Computer Networks

Course Code:	EET 710
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Credit Hours:	3+0
Prerequisites:	Computer Networks
Objectives:	Study of the advanced broadband network technologies and protocols i.e. SONET/SDH, ATM, VoIP, MPLS, GMPLS xDSL, WLL etc., the services that are provided by those technologies
Course outline:	Principles of broadband Networks and communication, SONET, IP over SONET, Frame Relay, ATM concepts, services and applications. ATM Standards and technology for local and wide area networks. ATM adaption layer, Access switching, ATM WAN Switches. ATM Service classes, QoS, ISDN technology. VoIP, IP over ATM, xDSL.,
Resources:	<p>1. Stallings, William. <i>High-speed networks: TCP/IP and ATM design principles.</i> Vol. 172. Englewood Cliffs, NJ: Prentice hall, Latest Edition, 2018.</p> <p>2. Leon-Garcia, Alberto, and Indra Widjaja. <i>Communication networks.</i> McGraw-Hill, Inc., 2016.</p>
Communication System Analysis and Design	
Course Code:	EET 523
Credit Hours:	3+0
Prerequisites:	None
Objectives:	<ul style="list-style-type: none"> • Emphasize on communication system modeling • Theoretical as well as Practical expertise over communication system designing. • Analyze the various challenges of communication system.
Course outline:	<ul style="list-style-type: none"> • Introduction to communication system • Mathematical communication channel modeling • Deterministic and Random signal Analysis • Oscillators, PLL, Frequency Synthesizer • Designing and analyzing Radio transmitters • Communication Receivers • Microwave Techniques • Satellite communication system Designing • Fiber optic system designing • Communication Link Analysis
Resources:	<p>1. Electronic Communications system by Davis. Kennedy, 3rd Edition.</p> <p>2. Wayne, Tomasi. "Electronic Communications Systems Fundamentals Through Advanced." (2003).</p>
Advance Satellite Communications	
Course Code:	EET 549
Credit Hours:	3+0
Prerequisites:	Digital Communication Systems & Wireless Communications
Objectives:	Satellite technology has progressed tremendously over the last 50 years since Arthur C. Clarke first proposed the idea in his article titled "Extra-terrestrial Relays" in the magazine Wireless World describing fundamentals behind the deployment of artificial satellites in geostationary orbits for the purpose of relaying radio signal. Arthur C. Clarke is often quoted as the inventor of the communications satellites. Since then, satellite systems have been providing

	<p>variety of services including broadband communications, audio/video distribution networks, maritime navigation, worldwide customer support as well as military command and control. Satellite systems are also expected to play an important role in the emerging 4G global infrastructure providing the wide area coverage necessary for ubiquitous computing applications in the near future.</p>
Course outline:	<ul style="list-style-type: none"> • Introduction to satellite communication systems • Satellite components (payload, orbital maneuvering systems, etc.) and look angle predictions Multiple access techniques in satellite • Satellite propagation environment & issues • Modulation and coding in satellite communications • Elements of VSAT systems and link budgeting • Non-geostationary satellite systems and DBS services
Resources:	<ol style="list-style-type: none"> 1. "Satellite Communications", Dennis Roddy, 4th Edition, McGraw-Hill, 2006 2. "The Satellite Communication Applications Handbook" Bruce R. Elbert, 2nd Edition, Artech House Publishers, 2004.

Telecommunication Network management

Course Code:	EET 560
Credit Hours:	3+0
Prerequisites:	Basics of Telecom
Objectives:	This course has been designed for the students having different types of backgrounds such as BSCS, BSSE BSCE, BE (Electrical) and BE (Telecom) to study and understand how telecom networks are management. It includes studying different protocols e.g. SNMP. It is assumed that students are having fundamental concepts/knowledge of different types of telecommunications networks such as Telephony Networks, IP and Data Networks etc.
Course outline:	<ul style="list-style-type: none"> - Fundamentals of Telecommunications - Types of Networks - Telecommunication Network Management - Network Design - Network Performance - Functions of Network Management Systems - Fault Management - Telephone Systems Management - Management through Network Dimensioning techniques - SNMP/HP/CORBA - Congestion Control, Quality of Service
Resources:	<ol style="list-style-type: none"> 1. Fundamentals of Telecommunications Network Management By Lakshmi G. Raman 2. OSS for telecom Networks : An introduction to Network management by Kundan Misra

DSP Applications in Telecommunications	
Course Code:	EET 703
Credit Hours:	3+0
Prerequisites:	Digital signal Processing
Objectives:	The course aims at introducing the students with the application of Digital Signal Processing in the telecommunication industry and its related concepts
Course outline:	IIR Filter Design, Impulse Invariance method, Bilinear Transformation (BLT) method , Comparison with FIR Filter Design, Windows, Kaiser method, Computer-based Digital Filter design, Real-time implementation of Digital filters on Texas Instruments' DSK board TMS320C6x, Decimation, Interpolation, Sampling rate conversion, Telecom Applications like Design of phase shifters ,Digital filter banks, Sub-band Coding of speech signals, Transmultiplexers, Forward Linear prediction, Backward Linear prediction, AR, ARMA processes, Wiener filters, Speech recognition and Synthesis, Speech modeling and Quantization, Digital audio basics, Oversampling and Multirate processing, Dithering and Companding, Hi-Fi Audio, Digital FM Stereo generation, Spread spectrum Communication, Modem, GSM handset
Resources:	1. Shenoi, Kishan. <i>Digital signal processing in Telecommunications</i> . Prentice-Hall, Inc., 1995.
Broadband Technologies and Components	
Course Code:	EET 705
Credit Hours:	3+0
Prerequisites:	None
Objectives:	This module introduces the technologies involved in the design and construction of transport networks (wireless, copper and optical) and the applications areas in which they are used. It covers the physical fundamentals of the generation, guided transmission, amplification and reception of light, the design consideration and techniques used in radio networks, the principles of digital transmission and the role of optics and wireless in both access and core networks.
Course outline:	<ul style="list-style-type: none"> • Principles of Digital Transmission • Optical Fibre Principles • Principles of Photon Generation and Reception • Optical Amplification and Wavelength Division Multiplexing • Design of Optical Links • Optical Networking • Radio Propagation • Radio System concepts • Microwave Transmission systems
Resources:	<ul style="list-style-type: none"> • Broadband Planar Antennas: Design and Applications Feb 3, 2006 • by Zhi Ning Chen and Michael Yan Wah Chia • Akujuobi, Cajetan M., and Matthew NO Sadiku. <i>Introduction to broadband communication systems</i>. Chapman and Hall/CRC, 2007. • Guided Wave Optical Components and Devices: Basics, Technology by Bishnu P. Pal – Latest Edition

Advanced Optical Fiber Networks	
Course Code:	EET 706
Credit Hours:	3+0
Prerequisites:	Physics
Objectives:	The course will provide an understanding of the theory of optics and its application in the transmission of data along the cabling, This course provides a background in fiber optics systems so that engineers will be able to utilize fiber optics in field.
Course outline:	Introduction and overview of current developments in Optical Communication Networks. Types of optical fiber, Waveguide phenomenon, Optical fiber losses (Attenuation, Dispersion), Type of advance fiber, Light Sources, Receiver and its characteristics, Optical Amplifiers, Link budget calculation, Dense Wavelength Multiplexing (DWDM), Standards for Advanced Optical Networks, emerging technology, OPNET/ VPI simulation and software tool
Resources:	<ol style="list-style-type: none"> 1. Ramaswami, Rajiv, Kumar Sivarajan, and Galen Sasaki. <i>Optical networks: a practical perspective</i>. Morgan Kaufmann, Latest edition. 2. Ho, Pin-Han, Hussein T. Mouftah, and Jing Wu. "A novel design of optical cross-connects with multi-granularity provisioning support for the next-generation internet." <i>IEEE International Conference on Communications, 2003. ICC'03..</i> Vol. 1. IEEE, 2003. 3. Keiser, Gerd. "Optical fiber communications." <i>Wiley Encyclopedia of Telecommunications</i> (2003).
Telecommunication Business Environment	
Course Code:	EET 707
Credit Hours:	3+0
Prerequisites:	None
Objectives:	The objectives of the TBE module are for students to gain an appreciation of the external environment within which a telecommunications business operates and how a company can successfully conduct business in this environment. Two perspectives are therefore taken: scene setting descriptions of the macro-economic and regulatory environment of today (focusing on the Pakistani, but with a global view also); coupled with an introduction to the management of a telecommunications business.
Course outline:	<p>Introduction to Telecommunications & ICT Business</p> <p>Business Strategic Drivers</p> <p>The Regulatory and Legal Scene</p> <p>Review of the Industry</p> <p>Business Cases</p> <p>Financial Management</p>
Resources:	<ul style="list-style-type: none"> • Media, Telecommunications, and Business Strategy by Richard A. Gershon – Latest Edition • Telecommunications and Business Strategy by Richard A. Gershon -Feb 2008 • Marketing Telecommunications Services : New Approaches for a Changing Environment by Karen G Strouse - 1999

Network Planning and Evaluation	
Course Code:	EET 717
Credit Hours:	3+0
Prerequisites:	None
Objectives:	This module investigates how a large scale multi-purpose communication network can be planned and installed. The evolution of such networks from legacy PSTN to an NGN IP multi-service networks for the 21st century will be examined from the point of view of both core and access in a fixed and mobile environment. The roles of forecasting and traffic dimensioning are examined. Also investigated are the relationships between cost, network planning, dimensioning, network performance and the quality of service perceived by the users.
Course outline:	Introduction to Teletraffic & Networks , Network Strategy & Planning Forecasting, Access Network Planning , Access Network Evolution , Core Transport Planning , Network & Market Trends , Mobile Network Planning, Network Intelligence & service planning, Data Network Planning , Next Generation Networks (NGN) , Network Performance Planning
Resources:	<ul style="list-style-type: none"> • Sheridan, Patrick F., and J. A. Weitzen. "Evaluation of network planning and design for corporate internetworks." <i>IEEE Network</i> 3.6 (1989): 11-14. • Performance Evaluation and Planning Methods for the Next Generation by Andre Girard, Brunilde Sansò, Felida Vazquez-Abad – Latest Edition • WiMAX Network Planning and Optimization - by Yan Zhang – Latest Edition
Antenna and Microwave Engineering	
Course Code:	EET 751
Credit Hours:	3+0
Prerequisites:	Communication system
Objectives:	This course provides students with comprehensive coverage of a wide variety of antenna and propagation topics related to numerous communication systems.
Course outline:	<ol style="list-style-type: none"> 1. Fundamental Antenna Concepts 2. Material and Design Data 3. Types of Antennas 4. Fundamental Antenna Elements 5. Advanced Antenna Elements 6. Passive and Active Antenna Arrays 7. Electrically Small Antennas 8. The Propagation Channel and Practical Antenna Implementation 9. Phased Arrays 10. Cellular Antennas 11. Antenna Measurements
Resources:	<ol style="list-style-type: none"> 1. Collin R.E., ' Antennas and Radiowave Propagation', Mc.Graw Hill, Latest Edition 2. Balanis, C. A., 'Antenna Theory, Analysis and Design', Harper and Row Publishers, Latest Edition

Information Theory and Coding	
Course Code:	EET 553
Credit Hours:	3+0
Prerequisites:	Basic probability and linear algebra as well as a minimum of mathematical maturity are the only prerequisites. An introduction to what computer scientists mean by "information", including topics in data compression (such as zip files and mp3), error correcting codes, information entropy, cryptography, and randomness. This is an intermediate course in computer science, and as such requires some background in programming as well as math through at least pre-calculus.
Objectives:	This course presents the fundamentals of Information Theory, that stays at the basis of modern digital communications, data compression, lossy source coding and multiuser networks.
Course outline:	Asymptotic Equipartition Theorem, types, and typical sequences, Information measures and their properties: entropy, Kullback-Leibler divergence, mutual information, source coding theorem, channel coding theorem, rate distortion theory, quantization, maximum entropy principle Typical sequences and typical sets, error exponents in: hypothesis testing, source coding, and channel coding, information theory and estimation, rudiments of network information theory.
Resources:	(1) T.M. Cover and J.A. Thomas, Elements of Information Theory, Wiley, Latest Edition ; (2) I. Csisz'ar and J. K"orner, Information theory: coding theorems for discrete memoryless systems, Cambridge University Press, Latest Edition. (3) Codes: an introduction to information communication and cryptography by Norman Biggs, 2008
Telecommunication Switching Systems	
Course Code:	EET 756
Credit Hours:	3
Prerequisites:	
Objectives:	<ul style="list-style-type: none"> • To learn basics of switching systems and design of different switching systems. • To understand and designing of multistage networks • To understand different switching systems such as electronic space division switching and time division switching • To understand different signaling techniques and networks and topologies. • To understand different networks, charging and routing plans. • To understand the overall data communication and switching networks.
Course outline:	This course provides the conceptual fundamentals of telecommunication systems. It is designed to familiarize students with practical aspects of telecommunication system range from traditional wired & wireless systems. Students are also introduced with working and designed principles of SSN7. Multiplexing and multiple access schemes are also covered in detail: Basic Telephony; Digital Transmission Systems; Switching System, Electronic Space Division, Multiplexed Switching, Switching in LAN, Grade of Service, Synchronization, Control of Switching System, Call Processing Function, Channel Associated Signaling, Signaling System-7 (SS7), Telecommunications Traffic and models Numbering Plans, SONET, WLAN, Transmissions and switching techniques for various telecommunication Networks.

Resources:	1. Telecommunication Switching Systems and Networks by Thiagarajan Viswanathan and Gleaner Co. 2015 2. Telecommunication Switching Systems and Networks by V.S.Bagad – 2009 3. Telecommunication Switching And Networks by P. GnanaSivam – 2007 4. Routing and Switching Essentials Lab Manual by Cisco Networking Academy 2013.
Radio Frequency Engineering	
Course Code:	EET 765
Credit Hours:	3+0
Prerequisites:	Communication system
Objectives:	The course aims to introduce with radio frequency concepts and their implementation in communication system, Radio frequency engineering gives the knowledge of smith chart, impedance matching etc.
Course outline:	RF Overview (RF history, Basic building blocks in cellular, modulation schemes, signal variations, propagation models, fading characteristics, Types of Propagation Models (point-to-point model), Okumura-Hata model, Cost-231 model, microcell models. Antennas (Antenna basics, EIRP concept, Antenna parameters, radiation patterns, Antenna types & impact on system performance, etc.), Optimization philosophy (Basic optimization procedures, Air interface and network, System Design (Pre-implementation design issues, Eb/No Vs, SNR, receiver sensitivity, noise figure, dynamic range)
Resources:	(1) Foundation of Mobile Radio Engineering, Michel Daoud Yacoub, Latest Edition (2) Microwave and RF Engineering, R. Sorrentino, Giovanni Bianchi, JohnWiley & sons, 2010.
Advanced Cryptography	
Course Code:	CSC 704
Credit Hours:	3+0
Prerequisites:	Data Encryption and Security
Objectives:	On one hand, quantum computing promises new cryptanalytic tools on existing one-way functions (Shor's algorithms), but on the other hand, quantum cryptography promises perfect key distribution. The purpose is to bring the student to understanding of the current issues in the fast evolving world of cryptography.
Course outline:	Cryptography has evolved significantly since the introduction of one-way functions for public-key cryptography and digital signatures in the 1970's. A number of new interests were born from relations between cryptography and complexity theory: interactive proofs, zero-knowledge protocols, multi-party computing, etc. Another great change in the world of cryptography is currently unveiling itself: the impact of quantum computing/information processing on cryptography.
Resources:	1. Practical Cryptography, by Niels Ferguson, Bruce Schneier. Wiley Publishing, Latest Edition. 2. Applied Cryptography: Protocols, Algorithms, and Source Code in C, Second Edition, John Wiley and Sons, Latest Edition.

Advanced Simulation and Modeling	
Course Code:	CSC 708
Credit Hours:	3+0
Prerequisites:	Stochastic Process
Objectives:	The course will provide mathematical and probabilistic basis for system modeling and also provide a plate form for simulation of various protocols.
Course outline:	Introduction to Probability theory, Random variables, commonly used continuous and discrete distributions. Introduction to Stochastic Process, Poisson process, Markov chains, steady state and transient analysis. Psuedo random numbers: Methods of Generation and testing. Methods for generating continuous and discrete distributions. Methods for generating Poisson Process. Building blocks of Simulation, Data Structures and Algorithms. Introduction to Probabilistic modelling, Maximum Likelihood Variance reduction techniques: antithetic variates, control variates, common random numbers, importance sampling. Analysis of Simulation results: confidence intervals, design of experiments Markov Chain Monte Carlo techniques
Resources:	<ol style="list-style-type: none"> Sheldon M. Ross: Introduction to Probability Models 12th Edition, Academic Press, 2019 Donald E. Knuth: The Art of Computer Programming - Volume 2: Semi Numerical Algorithms,
Detection and Estimation Theory	
Course Code:	CTN 799
Credit Hours:	3+0
Prerequisites:	DSP
Objectives:	The theory of optimal parameter estimation, properties of estimation and tools for analysis of the efficacy of parameters will also be taught. Students will learn to design and analyze optimal and sub-optimal detection and estimation algorithms under realistic.
Course outline:	Bayesian Hypothesis Testing, Minimax Hypothesis Testing, Neyman-Pearson Hypothesis Testing, Composite Hypothesis Testing, Deterministic Signals, Stochastic Signals, Chernoff Bounds, Bayesian Parameter Estimation, Minimum-Variance Unbiased Estimators, Cramer-Rao bounds, Least-square estimates, Expectation Maximization (EM) algorithm, Wiener filters, Kalman filters,
Resources:	<ol style="list-style-type: none"> H. Vincent Poor, Signal Detection and Estimation, Springer, Latest Edition M.D. Srinath, P.K.Rajasekaran, R. Viswanathan, Introduction to Statistical Signal Processing with Applications, Prentice-Hall, Latest Edition S.M. Kay, Fundamentals of Statistical Signal Processing: Estimation Theory, Prentice Hall, Latest Edition
IP Multimedia System	
Course Code:	CSC 757
Credit Hours:	3+0
Prerequisites:	None
Objectives:	The course begins with a summary of the fundamentals of analogue and digital transmission of multimedia. It then goes into specific aspects of services for

	media transport over IP, IPTV, middleware for multimedia transport, and interactive multimedia services. Specific topics such as: MPEG coding formats and applications, multimedia-enabled devices, streaming systems and infrastructure support, etc., are covered in depth.
Course outline:	<ul style="list-style-type: none"> • Fundamentals of analogue and digital multimedia transmission • MPEG formats for media coding and transport • Services and transport over IP • IPTV • Middleware for multimedia support over heterogeneous networks and devices • Experimentation with real-time video streaming systems
Resources:	<p>Design and Analysis of IP Multimedia Subsystem (IMS) by Anis Aziz, Wagdy (Author), 2017</p> <ul style="list-style-type: none"> • Multimedia over IP and Wireless Networks: Compression, Networking, and Systems by Mihaela van der Schaar and Philip A Chou – 2007 • IP Multimedia Subsystem Complete Certification Kit - Study Book and eLearning Program - 2016 - by Erik Landry
Advanced Network Security	
Course Code:	EET 702
Credit Hours:	3+0
Prerequisites:	
Objectives:	<p>The objectives of this course are:</p> <ul style="list-style-type: none"> • To teach significance and impact of different network security attacks • To study data confidentiality techniques used in communication networks (Advanced encryption techniques) • To study data integrity techniques • To study different authentication schemes • Layer-wise study of different network security protocols and techniques
Course outline:	<ol style="list-style-type: none"> 1. Understand computer and network security related threats, attacks and their countermeasures 2. Analyze and understand the operation of various practical encryption schemes 3. Understand how data integrity schemes operate 4. Understand how data and user authentication is carried out in communication networks 5. Understand the operation of network security protocols used over the internet
Resources:	<ol style="list-style-type: none"> 1. Cryptography and Network Security, William Stallings, Seventh Edition, Pearson Education, 2016. 2. Security in Computing, Charles P. Pfleeger and Shari P. Pfleeger, Fifth Edition, Pearson Education, 2018

Blockchain Technology	
Course Code:	SEN 604
Credit Hours:	3+0
Prerequisites:	NIL
Objectives:	<p>Many people find it difficult to understand blockchain because it requires the coordination of many components for it to function, and it's hard to see the full picture until all the individual components are fully understood. Furthermore, since the field is very technical and relatively new, blockchain-related discussion by nature is full of jargon. Therefore, it is easy to get lost trying to follow nearly any conversation on blockchain if you have not built up the right background.</p> <p>Therefore, the goal of this course is to surmount the steep learning curve of blockchain. By the end of this course the student will understand how blockchain works and the ideas, technologies, and organizations sprouting from it.</p>
Course outline:	<p>Bitcoin Protocol and Consensus: A High Level Overview, Bitcoin and Blockchain History: From the Cypherpunk Movement to JPMorgan Chase, Bitcoin Mechanics and Optimizations: A Technical Overview, Bitcoin IRL: Wallets, Mining, and More, Ethereum & Smart Contracts: Enabling a Decentralized Future, Game Theory and Network Attacks: How to Destroy Bitcoin, Cryptoeconomics and Proof-of-State, Distributed Systems and Alternative Consensus, Scaling Blockchain: Cryptocurrencies for the Masses, Enterprise Blockchain: Real-World Applications, Anonymity: Mixing and Altcoins, Blockchain Hype and the Future.</p>
Resources:	<ol style="list-style-type: none"> 1. Bitcoin and Cryptocurrency Technologies (Princeton textbook) by Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller, and Steven Goldfeder, 2016.
IoT ARCHITECTURE AND PROTOCOLS	
Course Code:	EET 752
Credit Hours:	3+0
Prerequisites:	NIL
Objectives:	<ol style="list-style-type: none"> 1. To Understand the Architectural Overview of IoT 2. To Understand the IoT Reference Architecture and Real World Design Constraints 3. To Understand the various IoT Protocols (Datalink, Network, Transport, Session, Service)
Course outline:	<p>UNIT I – OVERVIEW IoT-An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations. M2M and IoT Technology Fundamentals- Devices and gateways, Local and wide area networking, Data management, Business processes in IoT, Everything as a Service (XaaS), M2M and IoT Analytics, Knowledge Management</p> <p>UNIT II – REFERENCE ARCHITECTURE IoT Architecture-State of the Art – Introduction, State of the art, Reference Model and architecture, IoT reference Model - IoT Reference Architecture-Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views. Real-World Design Constraints-Introduction, Technical Design constraints-hardware is popular again, Data representation and visualization, Interaction and remote control.</p> <p>UNIT III – IOT DATA LINK LAYER & NETWORK LAYER PROTOCOLS</p>

	<p>PHY/MAC Layer (3GPP MTC, IEEE 802.11, IEEE 802.15), Wireless HART, Z-Wave, Bluetooth Low Energy, Zigbee Smart Energy, DASH7 - Network Layer-IPv4, IPv6, 6LoWPAN, 6TiSCH, ND, DHCP, ICMP, RPL, CORPL, CARP</p> <p>UNIT IV – TRANSPORT & SESSION LAYER PROTOCOLS</p> <p>Transport Layer (TCP, MPTCP, UDP, DCCP, SCTP)-(TLS, DTLS) – Session Layer-HTTP, CoAP, XMPP, AMQP, MQTT</p> <p>UNIT V – SERVICE LAYER PROTOCOLS & SECURITY</p> <p>Service Layer -oneM2M, ETSI M2M, OMA, BBF – Security in IoT Protocols – MAC 802.15.4, 6LoWPAN, RPL, Application Layer</p>
Resources:	<ol style="list-style-type: none"> 1. Jan Holler, VlasiosTsiatsis, Catherine Mulligan, Stefan Avesand, StamatisKarnouskos, David Boyle, "From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence", 2nd Edition, Academic Press, 2018. 2. Peter Waher, "Learning Internet of Things", PACKT publishing, BIRMINGHAM – MUMBAI 3. Bernd Scholz-Reiter, Florian Michahelles, "Architecting the Internet of Things", ISBN 978-3-642-19156-5 e-ISBN 978-3-642-19157-2, Springer 4. Daniel Minoli, "Building the Internet of Things with IPv6 and MIPv6: The Evolving World of M2M Communications", ISBN: 978-1-118-47347-4, Willy Publications 5. Vijay Madisetti and ArshdeepBahga, "Internet of Things (A Hands-on-Approach)", 1st Edition, VPT, 2014. 6. http://www.cse.wustl.edu/~jain/cse570-15/ftp/iot_prot/index.html
PRIVACY AND SECURITY IN IoT	
Course Code:	EET 753
Credit Hours:	3+0
Prerequisites:	NIL
Objectives:	<ol style="list-style-type: none"> 1. Ability to understand the Security requirements in IoT. 2. Understand the cryptographic fundamentals for IoT 3. Ability to understand the authentication credentials and access control 4. Understand the various types Trust models and Cloud Security.
Course outline:	<p>UNIT I – INTRODUCTION: SECURING THE INTERNET OF THINGS</p> <p>Security Requirements in IoT Architecture - Security in Enabling Technologies - Security Concerns in IoT Applications. Security Architecture in the Internet of Things - Security Requirements in IoT - Insufficient Authentication/Authorization - Insecure Access Control - Threats to Access Control, Privacy, and Availability - Attacks Specific to IoT. Vulnerabilities – Secrecy and Secret-Key Capacity - Authentication/Authorization for Smart Devices - Transport Encryption – Attack & Fault trees</p> <p>UNIT II- CRYPTOGRAPHIC FUNDAMENTALS FOR IOT</p> <p>Cryptographic primitives and its role in IoT – Encryption and Decryption – Hashes – Digital Signatures – Random number generation – Cipher suites – key management fundamentals – cryptographic controls built into IoT messaging and communication protocols – IoT Node Authentication</p> <p>UNIT III- IDENTITY & ACCESS MANAGEMENT SOLUTIONS FOR IOT</p> <p>Identity lifecycle – authentication credentials – IoT IAM infrastructure – Authorization with Publish / Subscribe schemes – access control</p>

	<p>UNIT IV- PRIVACY PRESERVATION AND TRUST MODELS FOR IOT Concerns in data dissemination – Lightweight and robust schemes for Privacy protection – Trust and Trust models for IoT – self-organizing Things - Preventing unauthorized access.</p> <p>UNIT V - CLOUD SECURITY FOR IOT Cloud services and IoT – offerings related to IoT from cloud service providers – Cloud IoT security controls – An enterpriseIoT cloud security architecture – New directions in cloud enabled IoT computing</p>
Resources:	<ol style="list-style-type: none">1. Practical Internet of Things Security (Kindle Edition) by Brian Russell, Drew Van Duren, June 20162. Securing the Internet of Things Elsevier, 1st Edition, January 20173. Security and Privacy in Internet of Things (IoTs): Models, Algorithms, and Implementations, April 2016.

Appendage 3404

BAHRIA UNIVERSITY, ISLAMABAD
DEPARTMENT OF LAW
FACULTY NAME: MALIEKA FARAH DEEBA
COURSE OUTLINE

Course Name	Islamic Family Laws	Prepared in	Fall 2019
Course Code	LLM 756		
Credit Hours	3	Revised on	As per Requirement
Course Prerequisite	Nil		
Prerequisite Code	N/A		
Course Type	Elective		
Program	<input type="checkbox"/> LLM & PhD		
Semester	Fall 2019		

Course Description

In Muslim jurisdictions by contrast, Islamic law courses form part of the compulsory offerings at any law school. Often based on the school of jurisprudence locally prevailing, Islamic law is in these settings all too frequently presented in a sterile, descriptive form. We believe that the need for a teaching and learning resource responding to the needs of constituencies, seeking a critical engagement with the subject cannot be overstated. If contemporary lawyers of the Muslim world are to effectively grapple with the challenge of developing and adapting Islamic law in the future, a comprehensive, inclusive and innovative approach must be encouraged.

This course therefore attempts to contribute towards filling the gaps in both Muslim and non-Muslim jurisdictions.

Course Learning Outcomes

CLO #	Description	
1.	An understanding of and engagement with the theoretical discourse regarding Islamic law	
2.	An understanding of the development of the principal sources of Islamic law in the area of family rights and their incorporation into state legislation	
3.	A critical and context-based analysis of issues relating to legal reform in the Muslim world, identifying principles of Islamic family law in the legislation of various Muslim countries covered in the course	
4.	An examination of the application of Islamic family law in diasporic communities using the United Kingdom as a case study	

Teaching & Learning Methodology

This course on Islamic family law has three distinct components. It begins with an overview of the sources and principles of Islamic family law, before going on to examine in more detail the key issues of marriage, divorce and children. Finally, students will examine the codification of family law under various law reform initiatives in the Muslim world at different historical moments and eras, and consider the position of Muslims living in the contemporary diaspora. In our view all of these components are essential, firstly to give students a clear grasp of the core principles of Islamic family law, and secondly to set that understanding in a contemporary context.

The teaching and learning process in Islamic family law must therefore begin with an understanding of the sources of Islamic law and how these are applied in developing a coherent legal formulation on a particular topic. On certain subjects, for instance divorce, there is a wealth of primary source material; in other cases, for instance adoption, there is very little. In each case the original sources of Islamic family law have been supplemented and developed over fourteen centuries of legal thinking. Apprehending the diversity of opinion that results from this is the first hurdle faced by any prospective student of Islamic family law. The law student who takes this course, and is used to the certainty and clarity of „black letter“ family law, must quickly get used to the fact that in the Islamic context, what constitutes a „legal norm“ is open to a variety of possible interpretations and outcomes. The reading and assessments in this course outlines are designed to reflect that plurality of legal opinion and practice.

The course outlines is designed to be flexible. The proposed syllabus is designed primarily tentative that may be delivered over a teaching term of four months (Sixteen Weeks), but it can be easily expanded at the extensive level. Each topic covered includes a suggested lecture structure, at least one seminar subject, recommended reading lists and summative assessments.

As a sixteen week course we would recommend delivery of three-hour lecture every week including small group seminar.

The lectures are necessarily fact based, but should also be used to introduce the students to themes and issues that will require further exploration in the seminars. We have tried to include a wide range of readings on each topic which reflect the multifaceted nature of Islamic legal thought, and it is intended that the breadth of the discourse on each topic be introduced in the lectures. This will give students a solid factual foundation upon which to base their own work in the seminars.

In a subject such as Islamic law, small group teaching acquires added significance. Students are able to pose questions and familiarise themselves with the „culture“ of the subject, its line of argumentation and understanding of complex concepts. In small groups students can be expected to engage with the theoretical discourse on any given subject. Alternatively the session could be given over to an in-depth study of one piece of primary source material, for instance one verse of the Quran, its interpretation and context. We hope that the course outline and materials are flexible enough to allow teachers to modify the themes covered depending on whether the students are either of LLM or PhD class. For teachers who wish to extend the course without expanding on the core syllabus, we would suggest setting a supervised research project. For instance, students could be given the opportunity to discuss, evaluate and analyse case studies on law reform in the Muslim world, or to investigate the impact of Islamic family law on Muslim diasporic communities in Europe, the USA or Canada.

Grading Policy

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

Week-wise Course Outline		
Week / Session	Contents	Activities / Learning Outcome/Readings
1.	Historical Overview and Sources of Islamic Law	<p>The first part of the course is devoted to providing an overview of the early development of Islamic law and the emergence of various schools of juristic thought in this legal tradition. Knowledge of the formative and classical periods of Islamic Law, set in an historical context, is a basic tool for the understanding of contemporary themes in Islamic Law.</p> <p>The aims and objectives are to:</p> <ul style="list-style-type: none"> • set the formation and development of Islamic Law in an historical context • give students an understanding of the core sources of Islamic law • illustrate the plurality of thought, custom and application of law within Muslim communities • introduce students to the critical discourse on this subject <p>Reading</p> <p>The readings are overlapping and repetitive in the sense that they all provide an historical backdrop to the sources of Islamic law and its classification into primary and secondary sources and so on. The reason for suggesting the reading list below is to provide materials from a range of perspectives.</p> <p>Core texts</p> <p>D. Pearl & W. Menski, Muslim Family Law (1998) 3rd edition, London: Sweet & Maxwell pp. 3-18. N.J.Coulson, A History of Islamic Law (1964) Edinburgh: Edinburgh University Press pp. 9-20 Taha J. al-Alwani, "The Crisis in Fiqh and the Methodology of Ijtihad" (1991) Vol. 8 The American Journal of Islamic Social Sciences pp. 317-337. M.Z.Siddiqi, Hadith Literature Its Origin, Development and Special Features (1993) Cambridge: The Islamic Text Society W. B. Hallaq, "Ifta" and Ijtihad in Sunni Legal Theory: A Developmental Account" in M.K.Masud, B. Messck & D. Powers (eds.) Islamic Legal Interpretation. Muftis and Their Fatwas (1996) Cambridge: Harvard University Press pp. 33-43.</p> <p>Supplementary reading</p> <p>H.R.Kusha, The Sacred Law of Islam (2002) Aldershot:Dartmouth/Ashgate pp. 1350; 51-79</p>

		<p>M.A.Mannan (ed.,) D F Mulla's Principles of Mohammadan Law (1995) Lahore: PLD Publishers pp. i-xxii F. Rehman, Islam 2nd edition (1979) Chicago: The University of Chicago Press pp. 30-42; pp. 68-84</p> <p>A.A.An-Naim (ed.,) Islamic Family Law in a Changing World. A Global Resource Book (2002) London: Zed Books pp.1-21 A.A.A.Fyzee, Outlines of Muhammadan Law 4th edition (1974) Delhi: Oxford University Press pp. 1-39</p> <p>J. Burton, The Sources of Islamic Law. Islamic Theories of Abrogation (1990) Edinburgh: Edinburgh University Press pp. 1-14.</p>	
2.	<p>Marriage</p> <p>This part of the course will discuss the institution of marriage in Islam, its contractual nature and the requisites of a valid marriage, such as dower (mahr). It invariably generates a lot of interest in class and students find it fascinating to read verses from the Qur'an regarding marriage, polygamy and so on.</p>	<p>The starting point for this topic is the fact that marriage is a civil contract in Islam and that both parties are at liberty to include mutually acceptable stipulations in it. At the same time, the plural legalities operating within family law also require consideration and there needs to be awareness amongst students of how the cultural and social norms tend to overshadow the bare legal requirements of the contractual nature of marriage in the Islamic legal tradition. As an example, we suggest use of the Saima Waheed case to highlight the complex interplay between law and social norms and the role of courts in adjudicating upon these issues.</p> <p>Secondly, discuss and analyse the concept and role, both legally and socially, of the marriage guardian or wali.</p> <p>A third point for exploration in these sessions may be Mahr or dower as it is translated in English language writings on the subject. This translation often confuses students who tend to mix up the concept with dowry. Consider the differences between the two terms in law and in practice. Both are in law the sole property of the woman. Is it always so in practice?</p> <p>Finally consider those whom Muslims are not permitted to marry, and where the right to marry may be restricted by legal requirements. When discussing prohibited degrees of relationship in marriage, the term „fosterage“ needs to be clarified and explained from a comparative perspective. „Fostering“ has a legal significance in the UK and other western jurisdictions as meaning the taking up of parenting responsibilities for a child or children by persons other than the biological parents. In the Islamic legal tradition, where a woman breast feeds a child other than her own biological offspring she becomes the foster mother, her husband the foster father and children,</p>	

	<p>foster siblings. The relationship created is akin to a biological one insofar as it places the fostered child in a similar position in relation to prohibition to inter marry as if the child were actually a biological child of the „foster“ mother/father. A lively class discussion is likely to ensue leading to challenging questions regarding the application of related principles of Islamic law, including the right of the foster child to inherit from the foster parents and so on.</p> <p>The aims and objectives are to:</p> <ul style="list-style-type: none"> • give students a clear grasp of the requirements for a valid marriage contract in Islamic law • encourage students to look at the law of marriage from a comparative perspective • look at the influence of customary practice • engage with issues such as polygamy and consent • ask who can contract a valid Islamic marriage? <p>Reading</p> <p>The reading for this topic aims to give students a basic understanding of the contract of marriage in Islam whilst exposing students to the reality that within the Islamic legal tradition, there is a range of opinions and approaches towards family law, from the most conservative to the very progressive and contemporary.</p> <p>Core texts</p> <p>S. S. Ali, Is an Adult Muslim Woman sui Juris? Some Reflections on the Concept of „Consent in Marriage“ without a Wali with particular reference to the Saima Waheed case, 3 Yearbook of Islamic and Middle Eastern Law 1996, 156-174 A.A.A.Fyzee, Outlines of Muhammadan Law 4th edition (1974) Delhi: Oxford University Press</p> <p>A. Al-Hibri, “Marriage Laws in Muslim Countries: A Comparative Study of Certain Egyptian, Syrian, Moroccan, and Tunisian Marriage Laws” (1992) Vol. 4 International Review of Comparative Public Policy pp. 227-24. D. Pearl & W. Menski, Muslim Family Law (1998) 3rd edition, London: Sweet & Maxwell, Chapters 6, 7 and 8.</p> <p>Supplementary reading</p> <p>S. S. Ali, Women's Human Rights in Islam: Towards a Theoretical Framework, 4 Yearbook of Islamic and Middle Eastern Law 1998, 117-152</p> <p>S. S. Ali, “Marriage, Dower and Divorce: Superior Courts and Case Law in Pakistan” in F. Shaheed et al (eds.,) Shaping Women’s Lives Laws, Practices and Strategies in Pakistan, (1998) Lahore, Pakistan: Shirkatgah, pp. 107-142. Co-authored with R.Naz.</p>	
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3	<p>Dissolution of Marriage</p> <p>This topic explores the concept of dissolution of marriage in Islamic law including talaq, khul' and mubarat. As indicated in earlier sections, it is important to place the concepts within the wider normative framework of the Islamic legal tradition. It is suggested that the student be introduced to Qur'anic verses on talaq, and other forms of dissolution of marriage and to extrapolate general principles on the subject from these readings. Bear in mind that we will come back to these verses and principles in a later part of the course, particularly in Chapter Five, which examines Law Reform in the Muslim World and Chapter Six, which considers the Application of Islamic Law in Diasporic Communities.</p>	<p>The most prevalent form of the dissolution of marriage is the talaq. Talaq and its legal implications are an important and controversial aspect of Islamic family law and one that we recommend is dealt with in some detail in view of its practical impact for Muslim marriage and divorce globally. The popular understanding and viewpoint of a vast majority of Sunni Hanafi Muslims regarding pronouncement of talaq is that pronouncing the word "talaq" three times in a row has the consequence of an irrevocable dissolution of marriage. This is also the understanding of „Islamic divorce“ for many non-Muslims. The lecture should therefore begin with an explanation of the different modes of pronouncing talaq, the ahsan, hasan and bidda forms of the pronouncement and their legal roots and application. From here the lecture can progress to consider how and why an increasing number of Muslims and Muslim governments have taken issue with the summary mode of divorce, and how laws in these jurisdictions have declared this infamous „triple talaq“ illegal under Islamic law. Why did the triple talaq emerge as a possible avenue of dissolving marriage, why has it continued to date and on what grounds is it being prohibited in contemporary legislation of Muslim jurisdictions, is a question for every student of Islamic family law. As a comparison, it may be useful to look at Shia jurisprudence and reasoning behind the illegality of the triple talaq in that sect of Islam.</p> <p>The lecture should also cover the alternative modes of dissolution of marriage, khul' and mubarat, explaining their legal origin and their application.</p> <p>The aims and objectives are to:</p> <ul style="list-style-type: none"> • provide students with a sound understanding of the Qur'anic law on dissolution of marriage • encourage students to engage with wider cultural, sociological and political issues surrounding the dissolution of marriage for Muslims today • introduce students to ideas about how such Qur'anic verses might be codified in modern legal systems 	

		<p>Readings</p> <p>Core texts</p> <p>S. S. Ali, "Marriage, Dower and Divorce: Superior Courts and Case Law in Pakistan" in F. Shaheed et al (eds.,) Shaping Women's Lives Laws, Practices and Strategies in Pakistan, (1998) Lahore, Pakistan: Shirkatgah, pp. 107-142. Co-authored with R.Naz. D. Pearl & W. Menski, Muslim Family Law (1998) 3rd edition, London: Sweet & Maxwell. Chapter 9.</p> <p>J. Rehman, "The Sharia, Islamic Family Laws and International Human Rights Law: Examining the theory and practice of Polygamy and Talaq" (2007) International Journal of Law, Policy and the Family, pp 1-20.</p> <p>Supplementary reading</p> <p>S. S. Ali, Women's Human Rights in Islam: Towards a Theoretical framework, 4 Yearbook of Islamic and Middle Eastern Law 1998, 117-152</p> <p>S. S. Ali, "The Law of Inheritance and Reported Case Law Relating to Women" in F. Shaheed et al (eds.,) Shaping Women's Lives Laws, Practices and Strategies in Pakistan, (1998) Lahore, Pakistan: Shirkatgah, pp. 163-180. Co-authored with K. Arif.</p> <p>A.A.An-Naim (ed.,) Islamic Family Law in a Changing World. A Global Resource Book (2002) London: Zed Books. A.A.A.Fyzee, Outlines of Muhammadan Law 4th edition (1974) Delhi: Oxford University Press</p> <p>A. Al-Hibri, "Marriage Laws in Muslim Countries: A Comparative Study of Certain Egyptian, Syrian, Moroccan, and Tunisian Marriage Laws" (1992) Vol. 4 International Review of Comparative Public Policy pp. 227-24.</p> <p>M.A.Mannan (ed.,) D F Mulla's Principles of Muhammadan Law (1995) Lahore: PLD Publishers</p> <p>Z. Mir-Hosseini, Marriage on Trial. A Study of Islamic Family Law (2000) London: I.B. Tauris.</p> <p>J. J. Nasir, The Islamic law of Personal Status (1990) London: Graham & Trotman</p>	
4	<p>Parents and Children</p> <p>Following on from the discussion regarding marriage and modes of dissolution, we enter into an area of law that regulates the relationship between parents and children, the rights of children to an identity,</p>	The first point to make in this session is the important link between marriage and legitimacy of children. Legitimacy is established either by the birth of a child in a marriage which is valid (sahih) or irregular (fasid), but not one that is void (batil). Alternatively, it may be established through the doctrine of acknowledgement (iqrar). Legitimacy, or the right to establish parentage, is not only the framework in which the rights of the child are placed, but it is a significant indicator of the wider cultural and religious practices under discussion in the rest of the course.	

	<p>support and maintenance and the right to inherit from parents.</p>	<p>Reading</p> <p>Core texts</p> <p>S. S. Ali, "A Comparative Perspective of the United Nations Convention on Rights of the Child and the Principles of Islamic Law. Law Reform and Children's Rights in Muslim Jurisdictions" in S. Goonasekere (ed.) Protecting the World's Children: Impact of the UN Convention on the Rights of the Child in Diverse Legal Systems (2007) Cambridge: Cambridge University Press pp. 142-208.</p> <p>S. Ishaque, "Islamic principles on adoption: examining the impact of illegitimacy and inheritance related concerns in context of a child's right to an identity" (2008) Vol. 22 International Journal of Law, Policy and the Family pp. 393-420. D. Pearl & W. Menski, Muslim Family Law (1998) 3rd edition, London: Sweet & Maxwell. Chapter 10.</p> <p>S. S. Ali, "Custody and Guardianship: Case Law 1947-97" in F. Shaheed et al (eds.,) Shaping Women's Lives Laws, Practices and Strategies in Pakistan, 1998) Lahore, Pakistan: Shirkatgah, pp. 143-162. Co-authored with M.N. Azam.</p> <p>S. S. Ali, "Rights of the Child under Islamic Law and Laws of Pakistan: A Thematic Overview" (2006) Vol. 2 Journal of Islamic State Practices in International Law, pp. 1– 16.</p> <p>Supplementary reading</p> <p>A.A.An-Naim (ed.,) Islamic Family Law in a Changing World. A Global Resource Book (2002) London: Zed Books.</p> <p>M.A.Mannan (ed.,) D F Mulla's Principles of Mohammadan Law (1995) Lahore: PLD Publishers</p> <p>J. J. Nasir, The Islamic law of Personal Status (1990) London: Graham & Trotman.</p>	
5	<p>Law Reform in the Muslim World</p>	<p>Aims and Objectives</p> <p>This part of the course draws upon the concepts and normative framework of the earlier part of the course to analyse the extent to which these principles of Islamic family law find a place in the legislation of contemporary Muslim jurisdictions. It uses examples of law reform from South-Asian jurisdictions including the following:</p> <p>The Child Marriages Restraint Act 1929. This law is an example of a „standard setting law“ by the British colonial government to discourage child marriages.</p> <p>The Dissolution of Muslim Marriages Act 1939 (India, Pakistan and Bangladesh). This law reflects the responsiveness on behalf of the British colonial government and Muslims of British India to formulate a</p>	

		<p>law acknowledging Muslim women's rights to initiate dissolution of their marriage on „Islamically“ accepted grounds, but denied to them due to their conflict with local customary practices.</p> <p>The Muslim Family Laws Ordinance 1961 (Pakistan). This is an example of „indigenous“ local demands for family law reform including banning polygamy, modifying rules of inheritance to include orphaned grandchildren of predeceased sons/daughters and prohibiting the infamous „triple talaq“.</p> <p>As an example of the Maghreb (North African region), the Moroccan Family Code (Moudawana) of 2004 offers a fascinating example of law reform in the contemporary Muslim world</p>	
6		<p>Core Reading</p> <p>Buskins, L. „Recent Debates on Family Law Reform in Morocco, Islamic Law as Politics in an Emerging Public Sphere“, Islamic Law Society, Vol. 10, No. 1, Public Debates on Family Law Reform Participants, Positions and Styles of Argumentation in the 1990"s (2003), pp 70-131.</p> <p>Maddy-Weitzman, B. „Women, Islam, and the Moroccan State, The Struggle over the Personal Status Law“ in Middle East Journal, Vol. 59, No. 3, Democratization and Civil Society (Summer 2005) pp 393-410. D. Pearl & W. Menski, Muslim Family Law (1998) 3rd edition, London: Sweet & Maxwell pp.68-83, 166-175, 228-236, 273-278, 382-398.</p> <p>A A An Naim, “Sharia and positive legislation: is an Islamic state possible or viable?” (1998-1999) Vol. 5 Yearbook of Islamic and Middle Eastern Law pp. 29-41</p> <p>S.S. Ali, “Testing the Limits of Family Law Reform in Pakistan: A Critical Analysis of Muslim Family Laws Ordinance 1961.” (2002) International Survey of Family Law: Cambridge University Press pp.317-335.</p> <p>A.A.An-Naim (ed.,) Islamic Family Law in a Changing World. A Global Resource Book (2002) London: Zed Books pp. 1-21</p> <p>Supplementary Reading</p> <p>S. S. Ali, “Using Law For Women in Pakistan” in Ann Stewart (ed.,) Gender, Law and Justice, (2000) London: Blackstone, pp. 139-159.=</p>	

		<p>S. S. Ali, "A Critical Review of Family Laws in Pakistan: A Women's Perspective" in R.Mehdi (ed.,) Women's Law in Legal Education and Practice in Pakistan: North South Co-operation (1997) Copenhagen: Social Science Monographs. pp. 198-223. A.A.A.Fyze, Outlines of Muhammadan Law 4th edition (1974) Delhi: Oxford University Press</p> <p>Z. Mir-Hosseini, Marriage on Trial. A Study of Islamic Family Law (2000) London: I B Tauris.</p> <p>C. Mallat & J. Connors (eds.,) Islamic Family Law (1990)London: Graham & Trotman.</p> <p>M. A. Mannan (ed.,) D. F. Mulla's Principles of Mahomedan Law (1995) Lahore: PLD Publishers.</p>	
7	Application of Islamic Family law to Muslim Diasporic communities	<p>We suggest beginning with some discussion on the concept of a Muslim „diaspora“. We use the term „diasporic communities“ to reflect the plurality of practice and belief amongst Muslim migrant communities in Europe, and specifically the UK. In light of those multiple identities, we suggest that there may be some question as to whether the term „the Muslim diaspora“ is a useful categorisation. Indeed this very diversity of peoples is a major theme in many of the issues raised in this module. For instance, writers have argued that it is this diversity which has contributed towards the failure of the Muslim community in UK to have their personal law officially recognised by the State. It would also be useful for students to be given some general background as to where the Muslim presence in the UK came from, and how the behaviour and expectations of the Muslim communities in the UK have been conditioned and affected by their relationships with the UK, both as a colonial power and as a new home. This discussion might helpfully encompass an historical overview of migration to the UK in the twentieth century, the concept of the "myth of return" and the development of a nascent Angrezi Shariat. Against this background, the following inter-related subjects may then be considered. First, what is the position in classical Islamic Law, of the Muslim who finds himself outside of dar al-Islam? Should he abide by the laws of the state he is in, even if they conflict with his own personal law? Or, should his own understanding of</p>	

	<p>the sharia prevail? This discussion can be limited to pointing out that in classical Islamic jurisprudence, there is in fact little guidance on this matter. Tutors who wish however to consider this fertile subject in more detail can expand it accordingly. We suggest some discussion of what the proper classification for modern day non-Muslim jurisdictions should be. Can Europe still be considered to be dar al-Harb, or should it more properly be classified as dar al-amaan or dar al-suhl? How does this classification affect the behaviour of the individual in instances of conflict of laws?</p> <p>Relevant case law</p> <p>Alhaji Mohammad v. Knott (1969) 1 Q.B. 1 (1968) 2 W.L.R. 1446; (1968) 2 All E.R. 563</p> <p>Bibi v Chief Adjudication Officer</p> <p>R (on the application of Begum (Shabana) v Head Teacher and Governors of Dinbigh High School [2005] EWCA Civ 199; [2005] 1 FCR 530</p> <p>R (on the application of Begum (by her litigation friend, Rahman) (Respondent) v. Head teacher and Governors of Denbigh High School (Appellants) [2006] UKHL 15;</p> <p>Quoraishi v. Quoraishi (1983) 4 F.L.R. 706; (1983) 3 Fam. Law 86; (1985) F.L.R. 780</p> <p>Qureshi v Qureshi (1971) 2 W.L.R. 518</p> <p>R v Registrar General of Births, Deaths and Marriages, ex p. Minhas (1976) 2 All E.R. 246 (1977) Q.B. 1</p> <p>Seemi v Seemi (1990) 140 N.L.J 747</p> <p>Secretary of State for the Home Department v. Syeda Khatoon Shah (1997) Imm.A.R. 584</p> <p>Core Reading</p> <p>M.S.F.G Foblets, "Family Disputes Involving Muslim Women in Contemporary Europe. Immigrant Women Caught between Islamic Family Law and Women's Rights" in Howland (ed) Religious Fundamentalism and the Human Rights of Women (2002) London: Palgrave Macmillan pp.167-178 D. Pearl & W. Menski, Muslim Family Law (1998) 3rd edition, London: Sweet & Maxwell pp. 382-398.</p> <p>S S Ali, (2007) „Religious Pluralism, Human Rights and Muslim Citizenship in Europe: Some Preliminary Reflections on an Evolving methodology for Consensus“</p>	
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	<p>in T Leonon & J Goldschmidt (eds) Religious Pluralism and Human Rights in Europe Antwerp: Intersentia, pp. 57-79.</p> <p>Supplementary Reading</p> <p>I. Yilmaz, "Marriage Solemnization among Turks in Britain. The Emergence of a Hybrid Anglo-Muslim Turkish Law" (2004) 24 Journal of Muslim Affairs pp. 57-66</p> <p>S. Bano, Complexity, Difference and 'Muslim Personal Law': Rethinking the Relationship between Shariah Councils and South Asian Muslim Women in Britain (2004) Doctoral thesis submitted to the University of Warwick 2004.</p> <p>I. Yilmaz, "Law as Chameleon. The Question of Incorporation of Muslim Personal Law into the English Law" (2001) 21 Journal of Muslim Affairs pp. 297-308</p> <p>B. Berkovits, "Get and Talaq in English Law: Reflections on Law and Policy" in C. Mallat & J. Connors (eds.,) Islamic Family Law (1990) London: Graham & Trotman pp. 119-146.</p> <p>S. Poulter, "The Claim to a Separate Islamic System of personal Law for British Muslims" in C. Mallat & J. Connors (eds.,) Islamic Family Law (1990)London: Graham & Trotman pp. 147-166.</p> <p>A S Roald, Women in Islam The Western Experience (2001) London: Routledge</p> <p>A.A.An-Naim (ed) (2002) Islamic Family Law in a Changing World. A Global Resource Book London: Zed Books pp. 1-21</p> <p>B. Berkovits, "Get and Talaq in English Law: Reflections on Law and Policy" in C. Mallat & J. Connors (eds.,) Islamic Family Law (1990)London: Graham & Trotman pp. 119-146.</p> <p>S S Ali, (2007) „The Twain Doth Meet! A Preliminary Exploration of the Theory and Practice of as-Siyar and International Law in the Contemporary world“ in J Rehman & S Breau (eds) Religion, Human Rights and International Law: A Critical Examination of Islamic State Practices Leiden: Martinus Nijhoff Publishers.</p> <p>S. Poulter, "The Claim to a Separate Islamic System of personal Law for British Muslims" in C. Mallat & J. Connors (eds.,) Islamic Family Law (1990)London: Graham & Trotman pp. 147-166.</p>	
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		A S Roald, Women in Islam The Western Experience (2001) London: Routledge I.Yilmaz, "Law as Chameleon. The Question of Incorporation of Muslim Personal Law into the English Law" (2001) 21 Journal of Muslim Affairs pp297-308 I.Yilmaz, "Marriage Solemnization among Turks in Britain: The Emergence of a Hybrid Anglo- Muslim Turkish Law" (2004) 24 Journal of Muslim Affairs pp 57-66	
8	Revision		
9	MID-TERM EXAMS		
10	Islamic Family Laws in India	<p>Challenges in current day India.</p> <p>Reading</p> <p>Menski, W, 'Uniform Civil Code Debate in Indian Law: New Developments and Changing Agenda, The' (2008) 9 German LJ 211</p> <p>Case Study</p>	
11	Islamic Family Law (Comparative Perspective)	<p>Reading</p> <p>Hallaq, WB, Sharī'a: Theory, Practice, Transformations (CUP 2009) 'Engineering family law' 459-73; Rahman, F, 'A Survey of Modernization of Muslim Family Law' (1980) 11 International Journal of Middle East Studies 451. Chapter 1, Bano, S, Muslim Women and Shari'ah Councils: Transcending the Boundaries of Community and Law (Palgrave Macmillan 2012) 1-25; Yilmaz, I, 'Law as Chameleon: The Question of Incorporation of Muslim Personal Law into the English Law' (2001) 21 Journal of Muslim Minority Affairs 297. Book Review: Büchler, A, Islamic Law in Europe?: Legal Pluralism and Its Limits in European Family Laws (Ashgate 2011); Andrew Burrows, 'Family' in Burrows, A, English Private Law (OUP 2013) 40-114. Emon, AM, 'Conceiving Islamic Law in a Pluralist Society: History, Politics and Multicultural Jurisprudence' (2006) Sing. J. Legal Stud. 331; Khan, F, 'Traditionalist Approaches to Sharī'ah Reform: Mawlana Ashraf 'Ali Thānawi's Fatawa on Women's Right to Divorce' (PhD Thesis, Michigan University 2008) Conclusion: Understanding Sharī'ah Application in Minority Muslim Contexts, 201-16</p> <p>Case Study</p>	

12	Islamic Family Law and Conflict of Laws	Menski, W and Pearl, D, 'A Textbook on Muslim Personal Law' (Croom Helm 2004) 207-33.	
13	Islamic Family law and International Human Rights Law	Yefet, Karin Carmit (2011) "The Constitution and Female-Initiated Divorce in Pakistan: Western Liberalism in Islamic Garb", Harvard Journal of Law & Gender, 34.	
14	Seminar/workshop		
15	Revision		
16	Final Exam		

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.

Appendage 3405**ELIGIBILITY CRITERIA OF LLM PROGRAM**

Academic Program	Offered For	Admission Requirements / Eligibility Criteria
FACULTY OF SHARIAH & LAW		
Department of Shariah& Law		
PhD Shariah (Islamic Law & Jurisprudence) * 2 Years	Male & Female	LLM (Shariah& Law) / LLM / MS in Islamic Commercial Law, LLM / MS in Shariah / LLM / MS in Usul-al-Fiqh / MS Islamic Studies / MA (Hons) Islamic Studies (18 years) or equivalent with minimum CGPA 3.00/4.00 in semester system or 65% marks in annual system. (Only those candidates having MS Islamic Studies will be considered who have thesis on any topic of Fiqh / Islamic Law).
LLM Shariah (Islamic Law & Jurisprudence) * 2 Years	Male & Female	LL.B or Equivalent with minimum CGPA 2.50/4.00 in semester system or 50% marks in annual system.
MS Shariah (Islamic Law & Jurisprudence) * 2 Years	Male & Female	M.A Islamic Studies (Sixteen Years Education) or equivalent/M.AUsul-ud-Din /BS Islamic Studies/Shariah (Four Years Program)/ BA Usul-ud-Din (Honors) or (Al-Shahada Al-almia (HEC Recognized, along with Metric, FA, BA Degrees) with CGPA 2.5/4.00 in semester system or 60% marks in annual system. Note: Candidates other than IIU have to study additional course(s) before starting their regular core courses.
LLM Shariah (Islamic Commercial Law)* 2 Years	Male & Female	LL.B (H) Shariah& Law/LLB (Honors)/LL.B with CGPA 2.5/4.00 in semester system or with 50% marks in annual system.
MS Shariah (Islamic Commercial Law)* 2 years	Male & Female	M.A Islamic Studies (Sixteen Years Education) or equivalent/M.AUsul-ud-Din /BS Islamic Studies/Shariah (Four Years Program)/ BA Usul-ud-Din (Honors) or (Al-Shahada Al-almia (HEC Recognized, along with Metric, FA, BA Degrees) with CGPA 2.5/4.00 in semester system or 60% marks in annual system. Note: Candidates other than IIU have to study additional course(s) before starting their regular core courses.
LLM (Muslim Family)* 2 Years	Male & Female	LL.B (H) Shariah& Law/LLB (Honors)/LL.B with CGPA 2.5/4.00 in semester system or with 50% marks in annual system.
MS Shariah (Muslim Family Law)* 2 years	Male & Female	M.A Islamic Studies (Sixteen Years Education) or equivalent/M.AUsul-ud-Din /BS Islamic Studies/Shariah (Four Years Program)/ BA Usul-ud-Din (Honors) or (Al-Shahada Al-almia (HEC Recognized, along with Metric, FA, BA Degrees) with CGPA 2.5/4.00 in semester system or 60% marks in annual system. Note: Candidates other than IIU have to study additional course(s) before starting their regular core courses.
BA/LLB (Hons) Shariah& Law	Male & Female	HSSC or equivalent with minimum 50% marks.
<p>Note: All MS' LLM Shariah& Law and its allied programs will be offered in Arabic & English mediums. However proficiency in both languages and aptitude will be required.</p> <p>**The students admitted in in any MS/ LLM degree program who are not the graduates of IIU will have to study additional courses of Shariah/ Arabic language/ Law as per IIU rules and as per the recommendations of the admission committee (The period spend for languages and additional courses will be additional to the minimum period of the degree).</p>		
Department of Law		
PhD Law 3 years	Male & Female	LL.M or equivalent with minimum CGPA 3.00/4.00 in semester system or 60% marks in annual system.
LLM Corporate Law 2 years	Male & Female	LL.B or Equivalent with minimum CGPA 2.50/4.00 in semester system or 50% marks in annual system.
LLM International Law 2 years	Male & Female	LL.B or Equivalent with minimum CGPA 2.50/4.00 in semester system or 50% marks in annual system.
LLM International Trade Law 2 years	Male & Female	LL.B or Equivalent with minimum CGPA 2.50/4.00 in semester system or 50% marks in annual system.
LLM Human Rights Law 2 years	Male & Female	LL.B or Equivalent with minimum CGPA 2.50/4.00 in semester system or 50% marks in annual system.
MS Human Rights Law 2 years	Male & Female	16 years of schooling i.e. MA / MSc / BS (4 years) with minimum CGPA 2.50/4.00 in semester system or 50% marks in annual system.
LLB (Evening) 3 years	Male & Female	B.A /B.Sc. or equivalent with minimum CGPA 2.00/4.00 in semester system or 50% marks in annual system.

ADDITION IN ELECTIVE COURSE - 8TH SEMESTER - BS PSYCHOLOGY

Name of Course: **Sport and Exercise Psychology**

Credit Hour: 03

Course Code: SEP 458

COURSE OBJECTIVES

- To identify problem areas surrounding player and teamwork dynamics
- To achieve mind-body harmony through observation and analysis of case studies in sport and exercise
- To understand issues in conservation and management of player and team spirit during sport and exercise

COURSE OUTCOMES

After completing this course students will be able to:

- Analyze player and team characteristics required for efficient performances
- Help players and teams resolve intra and interpersonal issues related to sport and exercise
- Manage stress, energy, communication and competition in sport and exercise

Course Description

This course utilizes practical aspects of sport and exercise along with analyzing player dynamics through topics such as flow. Self-grooming and growth regarding personal fitness and team management are brought in focus through the study of Mental Skills Training, Focus, Attention and Concentration as well as Stress Management and Energy Management. Understanding the dynamics of Communication, Cohesion and Competition with Leadership skills are also an integral part of this course.

REFERENCE BOOKS:

Cotterill, S., Weston, N. & Breslin, G. (Eds.) (2016). *Sport and Exercise Psychology: Practitioner Case Studies*. ISBN: 978-1-118-68652-2

Thatcher, J., Day, M. & Rahman, R. (2011). *Sport and Exercise Psychology*.

Weinberg, R.S. & Gould, D. (1995). *Foundations of Sport and Exercise Psychology. Sixth Revised Edition*. ISBN-13: 978-1450469814

**SOP FOR OUTBOUND EXCHANGE STUDENTS OF ISTANBUL TECHNICAL UNIVERSITY
(ITU)**

1. Based on the maximum provision of students to be sent in an academic year, as permitted by ITU, there shall be students selected from each campus of Bahria University including, Islamabad, Karachi & Lahore, to go on the exchange program to ITU. In case suitable candidate(s) are not available in a campus, the seat may be transferred to the other campus.

2. 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

3. 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:

- a. The students must be a regular student of Bahria University taking full course load.
- b. The minimum CGPA of the student should be 3.0.
- c. The student must have studied for more than a year (2 semesters) with Bahria University.
- d. The student must be proficient in English and have good communication skills.
- e. The student must not have any disciplinary cases against them and should be void of any attitude problem.

4. The shortlisted students will be re-evaluated by a following member committee at Bahria University to shortlist students for final approval of Rector:

a. Pro-Rector	-	Chairperson
b. Registrar	-	Member
c. Director Academics	-	Member
d. Director Admissions	-	Member
e. Director Examinations	-	Member
f. Director Students Affairs	-	Member
g. Director International Office	-	Member

5. 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.

6. The responsibility of accommodation arrangement in Turkey, 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 ITU will assign against the applicant.

7. The student will defer their semester prior going to ITU, 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 ITU under exchange program. The student must adhere to departure and return dates as specified by his/her department.

8. The duration of the semester(s) studies abroad will not be counted towards the calculation of time bar.

Eligibility for Honors & Awards:

a. Students availing the exchange programme at the ITU will be eligible for academic honors & awards, as long as they are taking full semester loads in their studies at Bahria University.

b. 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.

9. If during the summer session,

a. The students take shortfall courses, they will be awarded actual grades and no capping will apply.

b. 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:

10. Student interested in registering for the courses at ITU 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.

11. The student must inform their Head of Department about the possible courses they wish to take at ITU 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.

12. 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:

a. Students applying for **credits transfer** are to submit original interim transcript and the course outlines of the course(s) studied at ITU 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 for final approval to Director International Office. There shall be no fee charged from the student for **credits transfer**.

b. **Credits transfer** of courses will only be allowed for Degree level programs (*equivalent to similar level program at Bahria University*) offered on campus.

- c. **Credits transfer** for only those courses will be allowed for which a course with similar standard, credit hours and matching description is available in the relevant academic program of Bahria University. As the marking criteria at ITU is slightly different from what is followed at Bahria University, therefore following grade mapping mechanism is to be followed:

Istanbul Technical University		Bahria University	
Grade	GP	Grade	GP
AA	4.0	A	4.0
BA	3.5	A-	3.67
BB	3.0	B	3.0
CB	2.5	B-	2.67
CC	2.0	C	2.0
DC	1.5	C-	1.67
DD	1.0	D	1.00
FF, VF	0	F	0.00

**Due to lesser number of grades at Istanbul Technical University, Grade B+. C+ & D+ of BU have been excluded because of their incompatibility with Grade Point equivalent of Istanbul Technical University Grades*

13. The courses must equate in description and laboratory work, if any, with the similar course of the relevant academic program of Bahria University.
14. **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 ISTANBUL TECHNICAL UNIVERSITY (ITU)

1. Bahria University will accept students from ITU 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.
2. Only students recommended by the International office of ITU will be entertained under this arrangement.
3. The inbound students from ITU 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.
4. The student will be responsible for own accommodation arrangement in Pakistan, but the International office of BU will assist in finding suitable accommodation.
5. There shall be no fee charged by Bahria University from students of ITU under student's Exchange program.
6. On successful completion of the course work at Bahria University, the student will be responsible to meet the **credits transfer** requirements of ITU 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.

Revised PEOs and PLO to PEO Mapping of BEE Program

University Vision

To become an internationally recognized university that contributes towards the development of nation through excellence in education and research.

University Mission

To attain highest standards in teaching, learning and research, at par with the international standards.

Department Vision

A commitment 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 the global leaders in their respective fields.

Program Mission

To produce ethically sound and technically competent electrical engineers who can serve in the diverse fields of research, design & development, teaching, system installation, support and maintenance.

Program Educational Objectives

Graduates from Bachelor of Electrical Engineering program are expected to achieve the following Program Educational Objectives and would possess the ability:

PEO 1:

To exhibit the expertise in the field of electrical engineering to compete with technical challenges and find the solutions of complex engineering problems.

PEO 2:

To be skillful employable graduates in different domains of design, development, operation and maintenance, as well as explore opportunities for entrepreneurship.

PEO 3:

To pursue professional growth by taking up higher studies, ascertain technologies, develop proficiency in the usage of new tools.

PEO 4:

To work in multicultural environment and communities, providing leadership in their domain, and responsive to ethical, moral, and societal issues.

Mapping of PEOs to University Vision and Program Mission

PEOs	University Vision	Program Mission
PEO 1:	✓	✓
PEO 2:	✓	✓
PEO 3:	✓	✓
PEO 4:	✓	✓

PEO to PLO Mapping

<u>Program Learning Outcomes(PLOs)</u>	<u>Program Education Objectives (PEOs)</u>			
	<u>PEO-1</u>	<u>PEO-2</u>	<u>PEO-3</u>	<u>PEO-4</u>
PLO 1 : Engineering Knowledge	✓			
PLO 2 : Problem Analysis	✓			
PLO 3 : Design/Development of Solutions		✓		
PLO 4 : Investigation	✓			
PLO 5 : Modern Tool Usage			✓	
PLO 6 :The Engineer and Society				✓
PLO 7 : Environment and Sustainability				✓
PLO 8 : Ethics				✓
PLO 9 : Individual and Team Work				✓
PLO 10 : Communication			✓	
PLO 11 : Project Management		✓		
PLO 12 : Lifelong Learning				✓

MEDICAL (MBBS) CURRICULAR ORGANIZATION

- TOR
- Organogram

TERMS OF REFERENCE

DATE OF FORMATION: 2016

Amended: on 2nd September 2019 (in DBOS)

PURPOSE:

The need for Curriculum Development Committee is

- to carry out curriculum reforms,
- to propose new methods for student selection,
- to incorporate advances in medical / dental informatics, and
- to fulfill the requirements from quality assurance and accreditation bodies.

The Department is proposed to fulfill all these needs.

DURATION OF COMMITTEE: The curriculum committee shall be a permanent committee.

TO WHOM DOES THE HEAD REPORT: The Principal /Dean Medical Section

HOW WILL DECISIONS BE TAKEN?

The decisions will be taken by consensus of all members, failing which it will be referred to the Dean.

Decisions will be taken in the meetings of CDC, following which it would be moved to DBOS, then FBOS and after approval will be submitted to ACM for final approval

FREQUENCY OF MEETINGS:

As required and at least quarterly

MODE OF COMMUNICATION:

- Meetings
- Emails

COMMITTEE DESIGNATIONS:

- Head
- Members

Invited Members: Medical Educationists, both national and internationally will be invited from time to time to offer their expert advice.

NUMBER OF MEMBERS: Heads of all the Clinical and Basic Sciences Departments, along with Student members, House officers and Allumini

CRITERIA FOR SELECTION OF MEMBERS:

HOD / Subject specialist

1 House officer

1 Allumini

2 Representatives of each under grad year

REVIEW OF TERMS OF REFERENCE AND MEMBERSHIP:

Annually or when required.

FUNCTIONS OF THE COMMITTEE:

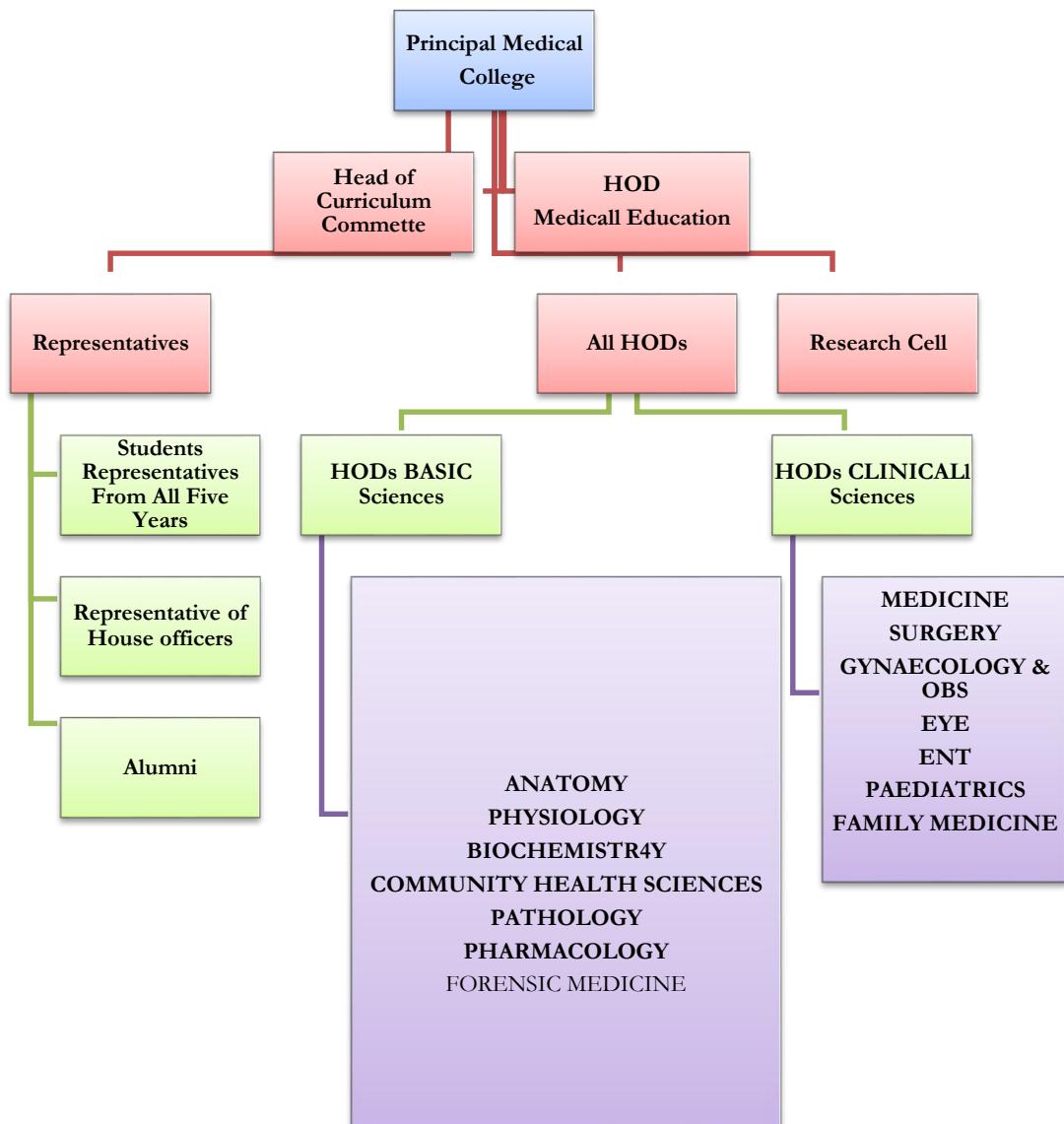
1. CURRCULUM CHANGE

Medical curricula around the world are undergoing reforms. The integration of basic and clinical sciences, emphasis on relevance, increased attention to personal and professional development, problem-based guided learning and self-directed learning and E-learning.

2. ACCREDITATION REQUIREMENTS

Accreditation and quality assurance bodies are demanding greater scrutiny of the education process, the number and qualifications of teachers and teaching/learning and assessment methods. This has resulted in the design of outcome-based curricula, audits of teaching, and appraisal activities that are now normal processes in many medical / dental schools around the world. The department will provide major support for these initiatives and a home base for staff and other departments involved in this process.

ORGANOGRAM REFLECTING CDC (MEDICAL)



Curricular Document (Dental)

Standard 1:	Mission Statement	To be approved
Standard 2:	Outcomes	(already approved)
Standard 3:	Curricular Organization Terms of Reference Organogram	To be approved To be approved
Standard 4:	Educational Contents	
	Needs assessment	(already approved)
	Goals	(already approved)
	Rationale	(already approved)
	Competencies	(already approved)
	Outcomes	(already approved)
	Content First year Second year Third year Final year	(already approved)
	Resources First year Second year Third year Final year	(already approved)
	Assessment policies	(already approved)
	Quality assurance	(already approved)
	Program evaluation By students By faculty	(already approved)
Standard 5:	Curricular Management	(already approved)

TERMS OF REFERENCE

DATE OF FORMATION: 2014

Amended: on 2nd September 2019 (in DBOS)

PURPOSE:

The need for Curriculum Development Committee is to carry out curriculum reforms, to propose new methods for student selection, to incorporate advances in medical / dental informatics, and to fulfill the requirements from quality assurance and accreditation bodies. The Department is proposed to fulfill all these needs.

DURATION OF COMMITTEE: The curriculum committee shall be a permanent committee.

TO WHOM DOES THE HEAD REPORT: The Principal Dental Section

HOW WILL DECISIONS BE TAKEN?

The decisions will be taken by consensus of all members, failing which it will be referred to the Dean.

Decisions will be taken in the meetings of CDC, following which it would be moved to DBOS, then FBOS and after approval will be submitted to ACM for final approval

FREQUENCY OF MEETINGS:

As required and atleast quarterly

MODE OF COMMUNICATION:

- Meetings
- Emails

COMMITTEE DESIGNATIONS:

- Head
- Members

Invited Members: Medical Educationists, both national and internationally will be invited from time to time to offer their expert advice.

NUMBER OF MEMBERS: Heads of all the Clinical and Basic Sciences Departments, along with Student members, House officers and Allumini

CRITERIA FOR SELECTION OF MEMBERS:

HOD Subject specialist

1 House officer

1 Allumini

2 Representatives of each under grad year

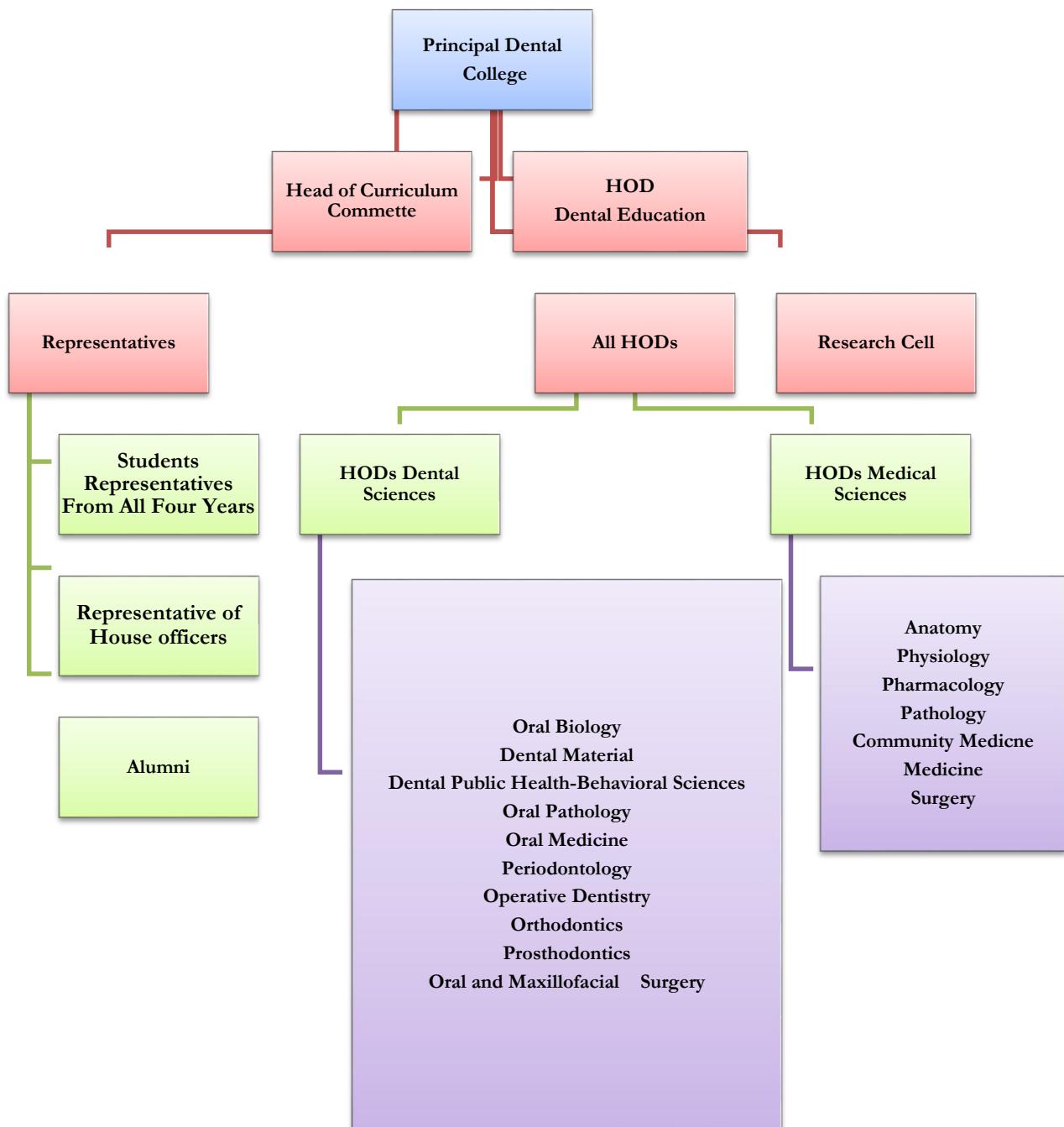
REVIEW OF TERMS OF REFERENCE AND MEMBERSHIP: Annually or when required.

FUNCTIONS OF THE COMMITTEE:

1. CURRCULUM CHANGE

2. ACCREDITATION REQUIREMENTS

CDC Organogram (Dental)



SOP FOR ENTERING MARKS OF RE-TAKE “FINAL” EXAMS INTO CMS

1. Re-take examinations marks entry case shall be approved by DG Campus/ (Director Campus in case of BULC) and its notification be sent to Director Examinations.
2. Director Examinations (DE) shall unlock the particular record of respective student(s) that will enable the Campus to enter the Retake Exams Marks of “Final” only, as per procedure/ sequence followed for the Final Exams. Electronic notification of the same is to be generated automatically to concerned DG CU, Dean, HOD and FM.
3. The Campus shall be authorized to make such entries within 05 days of unlocking. After 05 days, system will be automatically locked and disallow any marks entry. Late result, if any, is to be processed as per procedure for Late Submissions approved vide Decision 32(3028) of 32nd ACM.
4. Upon unlocking of particular record by DE, respective FM(s) shall enter the Retake “Final” Exams marks and submit the result by clicking on “Submit to HoD” button. The result shall be automatically locked and no change by FM(s) is possible after that.
5. Respective HoD(s) shall submit the received Re-take result(s) to CU Exam Department by clicking the button “Submit to Campus” for the particular course(s).
6. CU Exams Department shall forward the result(s) to BUHO Exam Dte on result submission date/ time by clicking on “Submit to Exams Dte”. After this, nobody at Campus level is authorized to make any corrections/ changes in the results.
7. Cases of pending internal/ mid-term marks entry for a Re-Take Exam, if any, are to be processed as Late Submissions.

MISSION OF PHD MEDIA STUDIES

To produce dynamic and intellectually endowed scholars to lead in research and communication fields.

Course Codes and Roadmap - PhD Media Studies

Semester-1		
Course Code	Subject	Credit Hours
MSM 801	Research methods in Media Studies	3
MSM 802	Media Debate: Issues in Media Communication	3
	(Elective)*	3
	Total Credit Hours 1st Semester	9
Semester-2		
Course Code	Subject	Credit Hours
MSM 804	Methods of Media Contents Analysis	3
MSM 805	Advances in Mass Comm. Research	3
	(Elective)**	3
	Total Credit Hours 2nd Semester	9
Semester-3		
Course Code	Subject	Credit Hours
	Comprehensive exam	0
THS 900	Supervised research (PhD thesis) including defense and acceptance of research proposal	9
	Total Credit Hours 3rd Semester	9
Semester-4		
Course Code	Subject	Credit Hours
THS 900	Supervised research (PhD thesis) including design and implementation of proposed solution.	9
	Total Credit Hours 4th Semester	9
Semester-5		
Course Code	Subject	Credit Hours
THS 900	Supervised research (PhD thesis) including analysis of the results and thesis write-up.	9
	Total Credit Hours 5th Semester	9

Semester-6		
Course Code	Subject	Credit Hours
THS 900	Supervised research (PhD thesis) submission of the Final Thesis for evaluation.	9
	Total Credit Hours 6th Semester	9
	Total Credit Hours for PhD Program	54
Compulsory Courses		
Course Code	Subject	Credit Hours
MSM 801	Research Methods in Media Studies	3
MSM 802	Media Debate: Issues in Communication	3
MSM 804	Methods of Contents Analysis	3
MSM 805	Advances in Mass Comm. Research	3
Elective Courses		
Course Code	Subject	Credit Hours
MSM 803	Theories of Influences on Media Content*	3
MSM 806	Political Communication**	3
MSM 807	Media and Society*	3
MSM 808	Media Sociology*	3
MSM 809	Theories and Strategies of Communication**	3
MSM 810	Media Ethics and Law*	3
MSM 811	Qualitative Research Methods*	3
MSM 812	Approaches to Media Effects**	3
MSM 813	Media and Globalization*	3
MSM 814	Comparative Media Studies**	3
MSM 815	Media and Environment*	3
MSM 816	Data analysis and interpretation**	3
MST 466	Foundations of behavioural research*	3

Note: Elective* to be offered in semester-1 and Elective** to be offered in Semester -2.

Appendage 3419

Bachelor of Science (Maritime Business & Management)
(2 Years) (Intake: 14 years education)

Sr.#	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Semester	STATUS
1		MTM 101	Introduction to Maritime Industry	3	Yes	1	Bridge Course
2		ECO 101	Fundamentals of Economics	3	Yes	1	Added
3		ENG 106	Functional English	3	Yes	1	Added
4		FIN 205	Fundamental of Accounting and Finance	3	Yes	3	Added
5		MKT 110	Principle of Marketing	3	Yes	5	
6		MTM 322	Fisheries Resources & Management	3	Yes	6	
Total Credit Hours in Semester-5				18			

Semester - 6							
Sr. #	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Semester	STATUS
1		MTM 222	Introduction to Coastal Zone Management	3	Yes	4	Bridge Course
2		HRM 353	Human Resource Management	3	Yes	5	
3		MAT 205	Statistics	3	Yes	4	Added
4		MTM 305	Maritime Logistics	3	Yes	5	
5		MTM 304	Port Operations and Management	3	Yes	5	
6		MIS 460	E-Commerce	3	Yes	5	
Total Credit Hours in Semester-6				18			

Semester - 7							
Sr. #	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Semester	STATUS
1		MTM 401	Coastal Eco-Tourism Development and Management	3	Yes	7	
2		MTM 306	Shipping Operations and Management	3	Yes	6	
3		MRM 302	Research & Project Writing Methods	3	Yes	6	
4		MTM 224	Marine Pollution & Control	3	Yes	4	Bridge Course
5			Elective 1	3	Yes	7	
6			Elective 2	3	Yes	7	
			Internship	0			
Total Credit Hours in Semester-7				18			

Semester - 8							
Sr. #	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Semester	STATUS
1	MRM 302	SDW 499	Project / Thesis	6	Yes	8	
2	MTM 322	MTM 403	Maritime Innovation & Entrepreneurship	3	Yes	7	
3			Elective 3	3	Yes	8	
4			Elective 4	3	Yes	8	
Total Credit Hours in Semester-8				15			

Summer Semester							
Sr.#	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory	Semester	STATUS
1		MTM 223	Marine Insurance	3	Yes	4	BRIDGE COURSE
2	MTM 101	GEO 115	Introduction to Geophysics	3	Yes	2	BRIDGE COURSE
3		MTM 230	Introduction to Maritime Law and International Maritime Convention	3	Yes	3	BRIDGE COURSE

Total Credit Hours in Semester	9			
Total Credit Hours	78			

POOLS OF ELECTIVES

Sr. #	Pre-requisite course code	Course Code	Course Title	Credit Hours	Theory
1		MTM 601	Conservation Ecology	3	Yes
2		MTM 602	Planktology	3	Yes
3		MTM 603	Natural Hazards and Management	3	Yes
4		MTM 604	Coastal and Marine Sedimentology	3	Yes
5		MTM 605	Sea Level Changes and Coastal Zones	3	Yes
6		MTM 606	Coastal Tourism Management	3	Yes
7		MTM 607	Coastal Land Reclamation	3	Yes
8		MTM 608	Mangrove Coastal Forest Management	3	Yes
9		MTM 610	Ocean Waves, Tides and Currents	3	Yes
10		MTM 611	Maritime Safety and Security	3	Yes
11		MTM 612	Ship Brokerage, Chartering and E-Commerce	3	Yes

FEASIBILITY REPORT A: ACADEMIC DETAILS
Faculty/Department: DEPARTMENT OF MARITIME STUDIES
Name or the programme: BS Maritime (Business and Management) (2 Years)
Mission or the Programme: BS (Maritime Business and Management) prepares the future Maritime Planners, Maritime Business Entrepreneurs, Managers and Corporate Governors to safeguard stakeholders' Business Ventures. The program also inculcates ethical practices in future Business Managers and Maritime Planners to cope up with the challenges emerging from complex regional and global businesses especially CPEC and OBOR.
Objectives of the Programme: i. To prepare future Maritime Planners and Professionals for developmental growth and employment opportunities. ii. To develop seaborne business acumen among the students to get professional degrees' in commensuration to their growth in the job market. iii. To promote ethical maritime business practices for the development of a vibrant, forward-looking and balanced society. iv. To prepare the students for meticulous maritime planning of various projects for mutual benefits and collaborative well-being.
Outcomes of the Programme: Graduates of BS (Maritime Business and Management) will be able to: <ul style="list-style-type: none"> • Prepare, analyze and interpret Maritime Business Opportunities and undertake business plans especially SMEs. • Put across viability analysis of various projects and cost-benefit reviews of Maritime Businesses in logical and convincing manners. • Recognize the rationale behind the growth and development of modern world seaborne businesses and its vast potentials. • Develop in-depth knowledge of the underlying principles of Maritime Business and provisions of the interface between knowledge and practice. • Critically realize awareness of current maritime problems and new insights in countries progress and prosperity under the backdrop of OBOR and CPEC.
The rationale for the Programme: <ul style="list-style-type: none"> • Seaborne Business has always maintained its relevance with economic growth and development of societies, for Pakistan, it has become essential in view of forthcoming CPEC projects and opportunities. • The program provides multiple employment opportunities in public as well as private sectors and upward growth in Regional and Global Businesses. • Our initial survey reflects the potential of students' pool for admission, provided we succeed in creating the right kind of awareness.
Brief Description of the Programme: Bachelor in Maritime Business and Management is designed to develop qualified and educated workforce on seaborne business. It will explore theoretical concepts and share regional and global best practices in Maritime Affairs using case studies. The professional deficiency in the services sector can consequently be covered by demonstrating the skills necessary to tackle problems within the complex world of Maritime Business and its growth. It is a two years' degree program for students who have 14 Years qualification in the form of an Associate Degree in Nautical Sciences/Ship Management, BSc in Maritime Studies or related fields.
Duration: 2 years
Venue(s): On-Site/Off-Site/Both On & Off-Site (Tick one; if Off-Site, give details): Department of Maritime Studies, Bahria University Karachi Campus
Programme Scheduling Format; Morning/Evening/Weekend (tick one); Bi-Semester/Trimester/Semester+Summer Session/Annual/Bi-Annual (tick one): Bi Semester + Summer Semester

Proposed Date or Commencement: Fall 2019
Mode of Study/Examination: As per BU Examination Rules
Additional Faculty Member(s) Required: (Indicate if there is a requirement for additional faculty members, fulltime/visiting, along with qualifications): No immediate requirement is envisaged.
Additional Skilled-worker(s) Required: (Indicate if there is a requirement for additional Skilled Staff, fulltime/part-time, along with their qualifications/skill sets.): Nil
Additional Classroom(s) required: (The requirement is to include the number of classrooms and their capacities.) First Semester: 1 Additional one classroom with the start of every semester till 8th semester.
Additional Requirement for Laboratories: (The requirement is to include the number of laboratories, their equipment and their capacities). One general lab would be required in the first year and one lab would be shared with the Department of Earth & Environmental Sciences BUKC.
Additional Requirement for Books, Subscriptions, Memberships to Online Research Sites/Repositories: Following books are required:- <ul style="list-style-type: none"> • The existing stock of books procured under NCMPR would partially work to start the program. • About 100 more books would be required on contemporary thought process by different writers on Maritime Affairs.
Minimum Entry Level: 14 Years qualification in the form of an Associate Degree in Nautical Sciences/Ship Management, BSc in Maritime Studies or related fields. With 2 CGPA or 50 % marks.
Admission Criteria: As per BU Rules
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> Nil
Number of Admissions Expected for First Intake: 20
Number of Admissions Planned/Expected for subsequent Intakes: 25-30
Referred by: (delete which is inapplicable)
FBOS: Special 26 FBOS meeting held on 21 June 2019, reference: Item No. 0401)
Complete Plan of Studies, inclusive of complete Roadmap: Attached as Annex-A (Copy of bridge courses and electives)
Course Outlines, Descriptions, Pre-Requisites & Readings (Compulsory & Recommended) (Attached as Annex "B")

B. FINANCIAL DETAILS
Source of Funding: • BU: Fully/Partially: Fully
Degree Duration: <u>Annual or Semester System;</u> Annual Number of Years Semester Number of Semester: 4 + Summer Semester
Total Number of Credit Hours: 78
The expected fee to be charged based on Cost & Benefits Analysis: (show working) Per annum fee: or Fee rate per credit hour: Rs. 3860 Fee Rate / Credit Hour: Rs 3860 Tuition Fee/Semester/Student: Rs 3860 x 18 = Rs 69,480.0
Expected Number of students for 1st & 2nd Intakes: 20 & 25
Expected Earning from first two Intakes (B5): (Show working): Tuition Fee/Semester/Student: Rs 69,480.0 Admission Fee and other Charges/Student (One Time): Rs. 36000 Earning from First Two Intakes: 2,109,600+2,637,000= 4,746,600 Earning from Summer Semester=1,788,300
Expected Earnings for the Next Five Years (B6): (show working) Attached as Annex C
Total Estimated Salaries of all Additional Human Resources per annum (B7): (Show working) Nil
Cost of Additional Laboratory Equipment/Tools (B8): (show working) : NIL Existing lab facilities shall be used
Cost of Additional Classrooms (B9): include furniture, technical aids etc): NIL Existing classrooms facilities shall be used
Cost of Additional Books, Subscription & Memberships to on-line Sites/Repositories (B10): (show details) Cost of one Book: 12000 Approximately on Average Cost of 100 Books: 250, 000
Off-Site rental Expenses and Cost of Other Fixtures (B11): (Show details) Nil
Miscellaneous Expenses required for starting the Programme (B12) – <ul style="list-style-type: none"> - Advertisement: 100,000 - Printing & Stationery: 10,000 - Admin Cost: 5000 - Any other: 5000 - Total: 1,20,000
Annual Recurring Expenditures in Subsequent Years (B13): <ul style="list-style-type: none"> - Salaries (five years): - Nil - Rentals: - Nil - Subscriptions/Memberships: - Nil - Advertisements: 500,000 per year - Printing & Stationery: 2,00,000 - Admin Cost: 5,00,000 - Any other: 1,00,000 - Total: 13,00,000
Total Cost of the Programme (B14): [Add B(7) to B(12)] 1,20,000+250000= 370,000
Net Cost of the Programme (B15): [Subtract B(1) from B(14)] 370,000
Net Earnings in First Year (B16: [Subtract B(15) from B(5)] For First Two Intake: 4,746,600-370,000= 4,376,600 Including Summer Semester: 6,534,900 -370,000=6,164,900
Projected Annual Gross Earning in Subsequent Years (B17): (show details & working; add 10% towards all expenses in subsequent years)

Year	Total Revenue (5 Year)	Total Expenses (5 Years) increment/year	10%	Net Earning	
Year1	8,024,500	370,000		7,654,500	
Year2	17,419,200	407,000		17,012,200	
Year3	21,110,300	447,700		20,662,600	
Year4	21,424,800	492,470		20,932,330	
Year5	21,424,800	541,717		20,883,083	
	89,403,600	2,258,887		87,144,713	
Projected Annual Net Earning in Subsequent Years: [Subtract B(13) from B(17)] 87,144,713					

**Courses Descriptions: Bachelor of Science (Maritime Business and Management)
(2 Years Programme)**

Introduction to Maritime Industry (MTM 101)

Course Description

This course is consist on facts and figures highlighting the importance of shipping to the world of trade; it will define brief introduction to types of ships Geographical origins and destination of major cargo; Maritime Perils, Meteorology; Role of Broker, Charterers, Shipper, Carrier, Consignee, Distributor, Retailer and end-user; Contracts of carriage, Charter parties, Shipping services; Port operations, Concepts of Maritime logistics; Basics of Shipping economics; Ship management, Quality control; Ship Operations; Ship board operations, Seaworthiness; Maritime Legal Infrastructure, Jurisdiction; Maritime Safety and Security, Marine pollution, Maritime Environmental issues.

Course Content

- Fundamentals of oceans and atmosphere
- Scope of maritime industry: national and international perspective
- Geographical significance of Pakistan coastline
- Ports & Transport/types of ships
- Shipping services
- Maritime Perils
- Maritime support operations
- Maritime environmental issues
- Future of maritime industry

Reading Material

- Gross, Oceanography: A view of the Earth, 6th Ed., 1996, Paerson.
- Branch's Elements of Shipping, 9th Ed, 2014, Routledge.

Fundamentals of Economics (ECO 101)

Course Description

The course will cover fundamental concepts of both macro- and microeconomics at the introductory level. Microeconomic aspects of the course include supply and demand; elasticity; market efficiency; cost of production; and profit maximization in competitive and monopolistic markets. Macroeconomics aspects include national income accounting; unemployment; inflation; Long-run and short-run aggregate demand and supply curves; economic growth and international trade.

Course Content

- Elementary microeconomics.
- The economic problem.
- Supply and demand.
- Elasticity.
- Marginal analysis of consumers' and firms' behavior.
- The theory of profit maximization.
- Analysis of markets.
- Pricing in competitive and non-competitive markets

Reading Material

- Mankiw, Principles of Economics, 7th Ed, 2008, Southwest Publishers.
- Pindyck and Rubinfeld, Microeconomics, 9th Ed, 2018, Pearson.
- Basu, K. Analytical Development Economics: The Less Developed Economy Revisited. 1st Ed, 2003, Cambridge, MIT Press.

Functional English (ENG 106)

Course Description

The purpose of this course is to develop the English-language proficiency of students and to help them become confident in reading, writing, speaking, and listening to the English language. Instead of teaching grammar in isolation and only at sentence level, this course is based on developing the language abilities of students through an integrated approach that provides opportunities to develop their listening, speaking, reading, and writing skills.

Course Content

- Grammar
- Construction of Sentence
- Reading skills
- Writing skills

Reading Material

- T. K. Carver and S. Fortinos-Riggs, Conversation Book II – English in Everyday Life (New York: Pearson Education Limited, 2006).
- J. Eastwood, Oxford Practice Grammar (Karachi: Oxford University Press, 2005).
- J. Swan, Practical English Usage, 3rd ed. (New York: Oxford University Press, 2005).
- J. Thomson and A. V. Martinet, A Practical English Grammar (Intermediate) (New York: Oxford University Press, 1986)

Fundamentals of Accounting and Finance (FIN 205)

Course Description

This course provides a rigorous introduction to the fundamentals of modern financial analysis and applications to business challenges in valuation, risk analysis, corporate investment decisions, and basic security analysis and investment management. The major sections of the course are, an introduction to the financial system, the financial challenges firms and households face, and the principles of modern finance in tackling these challenges, valuation of stocks, bonds, forwards, futures, and options, methods for incorporating risk analysis into valuation models, including portfolio theory, mean-variance optimization, and the Capital Asset Pricing Model, applications to corporate financial decisions, including capital budgeting and real options. Students will expand their confidence in performing financial calculations, communication, and team-work and presentation skills to support their activity during the course.

Course Content

Macroeconomic framework, Overview of the financial markets and the financial system, Capital Markets and Market Efficiency, the Investment Decision, The Financing Decision, The Cost of Capital and Capital Structure.

Reading Material

- Brealey, Richard, Stewart Myers, and Franklin Allen. *Principles of Corporate Finance*. 9th ed. New York, NY: McGraw Hill, 2007. ISBN: 9780071266758.
- Ross, S. A., Westerfield, R. W., Jordan, B. D. (2014). *Essentials of Corporate Finance Global Edition*. (Global or Middle East Editions). McGraw-Hill Higher Education.
- Berk, J. & DeMarzo, P. (2008). *Corporate Finance plus myFinance Lab*. (1 st Ed. International Edition.). Pearson.
- Arnold, G. (2008). *Corporate Financial Management*. (4 th Ed.). Pearson.

Principles of Marketing (MKT 110)

Course Description

This course introduces principles and problems of marketing goods and services. Topics include promotion, placement, and pricing strategies for products. Upon completion, students should be able to apply marketing principles in organizational decision-making. Upon completing the requirements for this course, the student will be able to explain the role of selling, customer relations and product management in marketing, describe marketing and define pricing and channel management strategies.

Course Content

The foundation of marketing, Environmental forces and marketing ethics, Strategic marketing planning and forecasting, The consumer market, Marketing research and analysis, Segmentation, targeting, and positioning, Product concepts, Product management, Service and nonprofit marketing, Pricing strategy, Marketing channels, Wholesaling and industrial distribution, Retailing, Promotional strategies and processes, Intercultural and international marketing, Quality and customer service.

Reading Material

- W. D. Perreault, Jr., J.P Cannon, and E. J. McCarthy (2009), *Basic Marketing: A Marketing Strategy and Planning Approach*, 17th ed., Irwin/McGraw Hill.
- C. H. Mason and W. D. Perreault, Jr. (2002) *The Marketing Game!* Third edition, McGraw-Hill, New York.
- Kotler, P., *Principles of Marketing*. Prentice Hall, 15th edition (2014).ISBN: 978-0133084047

Fisheries Resources & Management (MTM 322)

Course Description

Introduce the importance and scope of fishery industries on national economy. The subject areas cover the concept of sustainability and fish stock assessment at national, regional & international level. This course provides an introduction to the biology and ecology of a range of marine species (fish, crustaceans and molluscs) that are targeted by both commercial and recreational fisheries. Students will gain knowledge of behaviour, early life history, population dynamics, habitat utilisation, and trophic relationships relevant to understanding issues associated with exploitation and management. The course will introduce students to techniques used in fisheries science and will examine human impacts on, and management of, Australian marine populations. Students will also acquire an understanding of the present and future needs of, and prerequisites for, aquaculture and Deep Sea Fishing.

Course Content

Introduction to Biology and Ecology of Marine Vertebrates and Invertebrates: Reproduction and early life history, Age and growth, Habitat use, migration, and movement, Feeding ecology and trophic relationships, Population dynamics, Factors affecting fish distribution and abundance, Fisheries Management and Conservation: Stock assessment and stock recruitment, Catch Per Unit Effort (CPUE) and sustainability, Methods of harvesting, Managing fisheries and marine habitats, Use of fisheries models as management tools, Marine Protected Areas, Aquaculture, deep sea fishing methods.

Reading Material

- Charles, A.T., Sustainable Fishery Systems. 2001, Wiley-Blackwell, London.
- Haddon, M., Modelling and Quantitative Methods in Fisheries, 2001, Chapman and Hall, London.
- Gene S. Halfman. (2007). Fish Conservation: A Guide to Understanding and Restoring Global Aquatic Biodiversity and Fishery Resources

Introduction to Coastal Zone Management (MTM 222)

Course Description

This course will examine major trends and issues that are impacting the world's coastal and ocean resources. Scientific, economic, social and political aspects of each issue will be discussed and case studies will be used to illustrate the challenge of linking good scientific data with regulatory and management decisions. Topics include offshore renewable energy facilities, marine aquaculture, coastal development, climate change and coastal hazards, coastal pollution impacts. This course will give students an understanding of water resources management and protection.

Course Content

Characterization of the coasts and oceans, State of the world's Oceans: Trends and Issue, Marine Protected Areas (MPA), Coastal pollution: role of science and technology, Coastal hazards and urban ports, Global fisheries and aquaculture, Coastal Zone Management Issues: Land-Sea Linkages, Offshore Energy: fossil fuels or renewable sources, international Coastal Zone Management / Coastal Megacities, Coastal Tourism: benefits and impacts, Marine Mammals: Conservation and Protection, Climate Change Impacts on Coasts and Oceans,

Reading Material

- Crossland Ch., Coastal Fluxes in the Anthropocene, ISBN-10 3-540-25450-1 Springer Berlin Heidelberg New York, 2005 (e-book)
- Nick Harvey, Global Change and Integrated Coastal Management, ISBN-10 1-4020-3628-0 (e-book)
- UNESCO (2006): A handbook of measuring the progress and outcomes of Integrated Coastal and Ocean Management.
- Gordon, Jr.D.C., Boudreau, P.R., Mann, K.H., Ong, J.-E., Silvert, W.L., Smith, S.V., Wattayakorn, G., Wulff, F., Yanagi, T., 1996. LOICZ Biogeochemical Modelling Guidelines. LOICZ Reports & Studies, No.5, LOICZ, Texel, The Netherlands.
- Christopher J. Crossland · Hartwig H. Kremer · Han J. Lindeboom Janet I. Marshall Crossland · Martin D.A. Le Tissier (2005): Coastal Fluxes in the Anthropocene, ISBN-10 3-540-25450-1 Springer Berlin, Heidelberg New York.

Human Resource Management (HRM 353)

Course Description

This course examines the role of the human resource professional as a strategic partner in managing today's organizations. Students are introduced to the management of an organization's workforce through the design and implementation of effective human resources policies and procedures. Current issues and practices are examined. Topics include the need for human resources management and its growing professionalism; human resource planning including job design and analysis; recruitment and selection; compensation; employee development; workplace health and safety; and employee relations.

Course Content

Need for Human Resources Management, Matching HR Needs and People, Developing People, Compensation and Recognition, Recruitment and Selection, Developing a Healthy Work Environment and Effective Employee Relations.

Reading Material

- Dessler, G., Chhinzer, N., & Cole, N. D. Management of Human Resources: The Essentials plus My Management Lab w/ Pearson eText. 4th Cdn ed. Toronto, ON: Pearson Education Canada, 2015. ISBN: 0-13-380733-9 / 978-0-13-380733-2
- Boxall P , J Purcell and P Wright (eds) (2007) Handbook of Human Resource Management ,Oxford , Oxford University Press .
- Legge, K, Human Resource Management – Rhetorics and realities, 2005, Macmillan.
- Basingstoke Mabey, C, Salaman, G and Storey, J, Human resource management: A strategic introduction, 2nd Ed.,2008, Oxford, Blackwell
- Paauwe, J, HRM and Performance: Achieving long term viability, 2004, Oxford, Oxford University Press
- Schuler, R S and Jackson, S E, Strategic Human Resource Management, 2000, Oxford, Blackwell
- Torrington D, Hall L, and S. Taylor, Human Resource Management, 7th Ed.,2008, Edinburg, FT Prentice Hall.

Statistics (MAT 205)

Course Description

The course is designed to provide students of business and economics with the basic concepts of data analysis and statistical computing. Topics covered include basic descriptive measures, measures of association, probability theory, confidence intervals, and hypothesis testing, sampling distributions, normal theory estimation, regression and correlation, exploratory data analysis. This course provides students with pragmatic tools for assessing statistical claims and conducting their own statistical analyses.

Course Content

Histograms, The average, The standard deviation, The normal curve, Correlation. Statistical reasoning, The theory of probability. Chance Models, Expected value, Standard error, Probability histograms, Convergence to the normal curve. Statistical inference, Estimation, Measurement Error, Tests of statistical significance.

Reading Material

- Freedman, David, Robert Pisani, & Roger Pervis (2007). Statistics. New York: W. W. Norton.
- James, Gareth, Daniela Witten, Trevor Hastie, & Robert Tibshirani (2013). An Introduction to Statistical Learning: With Applications in R. New York: Springer.

- Kabacoff, Robert (2015). R In Action: Data Analysis and Graphics with R. Shelter Island, NY: Manning Publications Co.
- David M. Dietz, Christopher D. Barr, and Mine Cetinkaya-Rundel (2015). OpenIntro Statistics, American Institute for Mathematics

Maritime Logistics (MTM 305)

Course Description

Logistics and Supply Chain Management with Shipping and Port Operations examines current practices, trends and issues in the field of global logistics with particular focus shipping and port logistics. It looks at links between global trade, logistics and maritime transport as well as assessing the role and contribution of the shipping and port industry within global trade. The course explores the multiple external pressures and internal constraints that plague daily maritime logistics companies' operations. Topics include planning, utilizing resources efficiently, managing transportation costs, and ensuring superior delivery performance.

Course Content

International Maritime Trade and Logistics, Defining Maritime Logistics and Its Value, Supply Chain Integration of Shipping Companies, Human Elements in Maritime Logistics, Inland Logistics and Global Supply Chains, Logistics Strategy in Container Shipping, Cargo and Tanker Shipping Logistics, Public–Private Partnerships and Port (PPP) Logistics Performance, Port and Logistics Chains: Changes in Organizational Effectiveness, Implications of Changes in the Global Marketplace.

Reading Material

- Lambert, Douglas M - Supply Chain Management & Processes, 2nd Ed., 2005, Supply Chain Management Institute.
- Lambert, Douglas M., Martha C. Cooper, and Janus D. Pagh. "Supply chain management: implementation issues and research opportunities." *The international journal of logistics management* 9, no. 2 (1998): 1-20.
- Ayers, James B. *Handbook of supply chain management*. Auerbach Publications, 2006.
- Halldorsson, A., Kotzab, H., & Skøtt-Larsen, T. (2003). Interorganizational theories behind supply chain management-discussion and applications.

Ports Operations Management (MTM 304)

Course Description

The students will be able to explain the port's importance to economic development, explain the port's role in the development of international trade and global development describe what is required of a port to be functional, efficient and competitive, use scientific methods and practices for developing written reports and independently update his/her knowledge in the field, both through literature search, consult with experts and by audit of own practice

Course Content

Description of different ports, Port development and the development of terminal operations, New ship technology and port development, Sea operations, port operators, domestic transport and maritime transport, Port management, ownership and management, Port efficiency and safety, Port policy, Cargo and cargo handling, Port working conditions, Time in port and Efficient cargo handling, Development.

Reading Material

- Maria G. Burns, Port Management and Operations, CRC Press, Taylor & Francis Group, 2014, ISBN: 9781482206753.
- Alderton P., Port Management and Operations, Informa, 2008, ISBN: 978 184311 750 6
- Hwan Kim K. (Editor) & Gunther H.O. (Editor), Container Terminal and Cargo Systems: Design, Operations Management and Logistics Control Issues, 2007, Springer, ISBN: 3540 4954 95
- Khalid Bichou, Port Operations, Planning and Logistics, Informa, 2009, ISBN: 978 1 84311 8053

E-Commerce (MIS 460)

Course Description

This course introduces the concepts, vocabulary, and procedures associated with E-Commerce and the Internet. The student gains an overview of all aspects of E-Commerce. Topics include development of the Internet and E-Commerce, options available for doing business on the Internet, features of Web sites and the tools used to build an E-Commerce web site, marketing issues, payment options, security issues, and customer service.

Course Content

Introduction to electronic commerce, technology infrastructure: the internet and the world wide web, selling on the web: revenue models and building a web presence, marketing on the web, Business-to-business online strategies, online auctions, virtual communities, and web portals, environment of electronic commerce: legal, ethical, and tax issues, web server hardware and software, Electronic commerce software, electronic commerce security, payment systems for electronic commerce, planning for electronic commerce.

Reading Material

- Thompson Rivers University - Open Learning Division. Course Pack MKTG 4451: Electronic Commerce. Boston, MA: Pearson Custom Publishing, 2010.
- Turban, E., King, D., & Lang, J. Introduction to Electronic Commerce. 3rd edition. Upper Saddle River, NJ: Pearson Prentice Hall, 2011, ISBN: 978-0-13-610923-5

Coastal Eco-Tourism Development and Management (MTM 401)

Course Description

This course introduces the concepts and principles associated with sustainable tourism development, emphasizing on their implications for management and planning purposes. Topics to be addressed include: concept, justification and evolution of sustainable development; socio-cultural, economic, and environmental dimensions of sustainable tourism; positive and negative impacts of tourism development; and principles conducive to sustainable tourism planning and community development. Given that each case of tourism development is unique, examples from around the world will be used to examine and discuss issues and practices of sustainable tourism development within different geo-cultural contexts. This course adopts the Problem-Based Learning format, which promotes and enhances students' analytical skills, problem solving skill and team working skills.

Course Content

The Tourism Industry, A Review of Niche Tourism, An Overview of Sustainability, Sustainable Tourism Management: The Socio-cultural Dimension, Sustainable Tourism Management: The Environmental Dimension, Sustainable Tourism Management: The Economic Dimension, Sustainable Tourism Management in Urban Settings, Sustainable Tourism Management in coastal zones, Community Economic Development.

Reading Material

- Bricker, K., Black, R., & Cottrell, S. (2013). Sustainable Tourism & the Millennium Development Goals. Jones & Bartlett Learning: MA
- Swarbrooke, J. (1999). Sustainable Tourism Management. CABI Publishing: Oxon.
- Wall, G. (1996). One Name, Two destinations: Planned and Unplanned Coastal Resorts in Indonesia. In: Harrison & Husbands (Eds). 1996. Practicing Responsible Tourism. NY: John Wiley & Sons.
- Strasdas, W. (2013). Ecotourism and the Challenge of Climate Change: Vulnerability, Responsibility, and Mitigation Strategies. In: Bricker, K., Black, R., & Cottrell, S. (eds), Sustainable Tourism & the Millennium Development Goals, Jones & Bartlett Learning: MA.
- Agarwal, S., & Shaw, G. (Eds.), Managing coastal tourism resorts: a global perspective, 2007 Channel view publications.

Shipping Operations Management (MTM 306)

Course Description

This course provides an introduction to the technical and operational aspects of ship management. The course examines the operations that are necessary to transport cargo in a safe, efficient, and commercially viable manner. It looks at ships' nautical, commercial and cargo operations in detail. It also examines the concepts which underpin ship operations, asset maintenance, quality management and risk management. Upon completion of this course students will know able to explain the factors which affect cargo, ship operations and recommend measures for more efficient ship operations.

Course Content

The Ship Features and Types of Services, Ship Manning and Classification of Ships, Port Knowledge and Procedures, Ship Stability, Stack weight and Stresses, Principles of Cargo Stowage, Cargo Care and Damage Prevention, Stevedorage and Lighterage, Cargo Lifting Gears and Safe Handling Documentation in cargo operations, Heavy Lift Cargo Handling, Breakbulk Cargo Handling and Operations Containerization and Container Ship, Tanker, LNG, RoRo and Car Carrier Operations.

Reading Material

- Branch, Alan E. Economics of shipping practice and management. Springer Science & Business Media, 2012.
- Visvikis, Ilias D., and Photis M. Panayides, eds. Shipping Operations Management. Vol. 4. Springer, 2017.
- Institute of Chartered Shipbrokers, Ship Operations and Management, 2009 by Witherby Seamanship International Ltd , ISBN1905331746 (ISBN13: 9781905331741)

Research & Project Writing Methods (MRM 302)

Course Description

This course will provide students with a strong foundation in the conceptualization and operationalisation of research, how to design a research project and 'hands-on' skills in the utilization of different research methods. Students will be exposed to a wide range of research methods and will learn key principles of research design. Topics to be covered in detail include sampling, surveying, interviewing, case study analysis, focus groups, analyzing and presenting data. Intellectual and methodological debates will be discussed in order to assist students to develop informed opinions and a critical appreciation for other's research. The imperative for ethical research practice will be presented. Students will be equipped with the knowledge and

ability to undertake methodologically sound, original research projects and will develop a set of transferable workplace skills.

Course Content

Meaning of research, Literature reviews and data base searches, Writing workshop Online activity this week Formative Writing task, Research Ethics and Engaging Cultures Writing an ethics application, Theoretical Approaches, Qualitative Methods, Quantitative Methods, Research Analysis, Journal work, writing a research project, Verbal Presentations on research proposals.

Reading Material

- Booth W., Colomb G. and Williams J., *The Craft of Research*, Second edition. Chicago: Chicago UP, 2003.
- Ranjit Kumar, *Research Methodology A Step-by-Step Guide for Beginners*, 5th Ed., University of Western Australia, Australia, SAGE.
- Uwe Flick, *Introducing Research Methodology: A Beginner's Guide to Doing a Research Project*, 2nd Ed., SAGE.
- W Creswell, *Research Design.: Qualitative, Quantitative, Mixed Methods Approaches*, 2016.
- W. Creswell, *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, 3rd Ed., ISBN-13: 978-1412995306 ISBN-10: 9781412995306
- Judith Bell, *Doing Your Research Project (Open Up Study Skills)*, 5th Ed., Paperback 2010, ASIN: B008GSHDE4

Marine Pollution & Control (MTM 224)

Course Description

This course provides a convenient solution and delivers a current, comprehensive knowledge of the overall framework governing marine pollution, including applicable regulations, compliance requirements and related management strategies. It presents an integrated approach, analyzing the many sources of pollution, describing best practices for minimizing contamination, responding to accidents and exploring legal ramifications throughout the maritime and offshore sectors.

Course Content

Pollution in Context: Causes and Effects, Governance, Regulations and Enforcement, Air Pollution and Greenhouse Gas Emissions, Ballast Water and Other Marine Pollutants, Oil Pollution and Offshore Activities, Measurement and Management Systems, Legal Issues, Including Insurance and Compensation.

Reading Material

- Iliana Christodoulou-Varotsi, *Marine Pollution Control : Legal and Managerial Frameworks*, 2018, Taylor & Francis Ltd. ISBN10 1138856681
- Jerome Williams, *Introduction to Marine Pollution Control (Ocean engineering)*, 1979, John Wiley & Sons Inc, ISBN-10: 0471019046.

Maritime Innovation & Entrepreneurship (MTM 403)

Course Description

The course presents the key issues of innovation management and entrepreneurship in the context of the maritime domain, which includes global shipping, shipbuilding, marine equipment manufacturing, maritime service providers and the offshore wind and oil/gas sectors. Students will be able to learn main theories and models within innovation management and entrepreneurship research, Apply theories and models from innovation management and entrepreneurship research to studies of businesses in the maritime domain, Discuss the role of entrepreneurship and innovation in the maritime domain and assess their impact on the

development on businesses within the domain, Write and critically assess an innovation project within an existing company or a business plan for a start-up in the maritime domain.

Course Content

Innovation theory, Entrepreneurship theory, Maritime economics, Drivers of innovation and innovation management, Maritime Open innovation and product innovation Service innovation, Innovative business models, Process innovation, Opportunity recognition for entrepreneurs, Business plans and finance for start-ups A case of maritime entrepreneurship: Offshore wind sector, Performance effect of innovation and entrepreneurship.

Reading Material

- Goffin, K. & R. Mitchell, *Innovation Management: Strategy and Implementation using the Pentathlon Framework*, Basingstoke, 2nd Ed., 2010, Palgrave Macmillan.
- Talley, W. (ed.), *The Blackwell Companion to Maritime Economics*, 2012, Blackwell Publishing.

Marine Insurance (MTM 223)

Course Description

The course offers a thorough introduction to the history, framework, practice, economics and legal understanding of International Marine Insurance and the objective is to make the students familiar with the necessity of marine insurance and the important part marine insurance plays in shipping as well as having a general knowledge of individual covers and the terminology used in Maritime sector.

Course Content

The unique legal and practical aspects of marine insurance, Cargo types and insurance issues for each, Marine cargo insurance, Marine war and strikes insurance, along with piracy and related perils. Major cargo and offshore support vessel types and the insurance issues for each, Marine hull and machinery insurance (ocean hull and port operating vessels). War and strikes risks, hull, cargo and protection and indemnity (P&I), Towage and heavy lift operations and contracts, including “knock-for-knock” type contracts, Marine liability including P&I for ship owners and charterers, Marine financier protections, Maritime cyber risk, Marine reinsurance, The marine insurance broker’s duties, General average and salvage, Marine claims handling, recent law cases and legal aspects of total loss claims.

Reading Material

- Introduction to marine insurance. 2nd Ed., Robert H. Brown. London: Witherby, 1995.
- The principles of marine insurance: a primer. Harold A. Turner. 7th Ed., London: Stone and Cox, 1986.
- Elements of shipping. Alan E. Branch. 6th Ed., London: Chapman and Hall, 1989.
- International shipping: an introduction to the policies, politics and institutions of the maritime world. Bruce Farthing. 2nd Ed., Lloyd's of London Press, 1993.
- Shipping practice—with a consideration of the relevant law. Edward F. Stevens, C. S. J. Butterfield. 11th Ed., London: Pitman, 1981.

Introduction to Geophysics (GEO 115)

Course Description

The curriculum introduces the global properties of the Earth (gravity, magnetic field, crustal motions, and interior dynamics) and the determination of near-surface and interior properties through the use of seismology, electromagnetic, potential fields, remote sensing, geodesy and GPS. The curriculum provides a broad grounding in physical and mathematical fundamentals useful in energy, natural resource or engineering industries. Students will gain experience in the integrated application of geologic observations and geophysical measurements to the analysis of

Earth science and related engineering problems using current, industry-standard computational and GIS tools.

Course Content

SI units and significant figures, Work and force, Electricity, Heat, Thermodynamics, planets, gravity, angular momentum, radioactive decay, seismic waves, data corrections and reduction, Gamma ray and GPR, GIS techniques, Magnetic field techniques.

Reading Material

- Milsom JJ, Eriksen A. 2011. Field Geophysics. 4 th ed. Chichester, West Sussex, UK: John Wiley and Sons, Ltd. 288 p.
- Walker, JS. 2002. Physics. Upper Saddle River, NJ: Prentice Hall. 1087 p.
- Fowler, C.M.R. 2005. The Solid Earth: An Introduction to Global Geophysics.
- Cambridge: CUP. 685p.
- Lillie, R. Whole Earth Geophysics: An Introductory Textbook for Geologists and Geophysicists. Upper Saddle River, NJ: Prentice Hall. 361 p.

Introduction to Maritime Law and International Maritime Convention (MTM 230)

Course Description

This course is aimed to provide understanding of the International and National Shipping Laws and policies, maritime logistics, international regulatory framework, & International organizations like (APH Association of Ports and Harbours) / ISF (International Shipping Federation) / ICS (International Chamber of Shipping) / ITF (International Transport Workers' Federation). Upon completion of this course, the students will become familiar with the procedural aspects of the admiralty courts, and develop an understanding in some depth of the commercial and economic aspects of shipping and will have a greater understanding of shipping practices and their international nature

Course Contents:

Admiralty jurisdiction, practical concept of risk management in maritime area; History and development of marine insurance law, Shipping laws & corporate laws, maritime law & transportation law, customary law and treaty law, Limitation of liability & Salvage, International conventions, Marine pollution control and compensation.

Recommended Text Books/Reference Books

1. Donald R. Rothwell & Tim Stephens, The International Law of the Sea, 2nd Ed., Bloomsbury Publishing PLC, ISBN10 1782256849
2. Simon Boughen, Shipping Law, 6th Ed., 2015, Taylor & Francis Ltd., ISBN13 9780415712194

Minutes of 34th ACM

Annex - C

BS Maritime Business & Management (2 Years Program)

Proposed Fee Structure

Semester	Semester	CR.HRs	Fall Intake	Semester	CR.HRs	Spring Intake
S1	Fall	18	105,480	Spring	18	105,480
S2	Spring	18	74,480	Summer	9	39,740
S3	Summer	9	39,740	Fall	18	74,480
S4	Fall	18	74,480	Spring	18	74,480
S5	Spring	15	62,900	Summer	0	0
S6	Summer	0	0	Fall	15	62,900
Total	PKRs.	78	357,080	PKRs.	78	357,080

Student Strength Data in Five Years

Year	Total No. of Students	S#	Semester #	Semester	Total No. of Students	1st Intake	2nd Intake	3rd Intake	4th Intake	5th Intake	6th Intake	7th Intake	8th Intake	9th Intake	10th Intake
Year1	110	1	S1	F19	20	20									
		2	S2	SP20	45	20	25								
		3	S3	SM20	45	20	25								
Year2	240	4	S1	F20	75	20	25	30							
		5	S2	SP21	105	20	25	30	30						
		6	S3	SM21	60			30	30						
Year3	295	7	S1	F21	115		25	30	30	30					
		8	S2	SP22	120			30	30	30	30				
		9	S3	SM22	60				30	30					
Year4	300	10	S1	F22	120				30	30	30				
		11	S2	SP23	120				30	30	30	30			
		12	S3	SM23	60					30	30	30	30		
Year5	300	13	S1	F23	120					30	30	30	30		
		14	S2	SP24	120					30	30	30	30		
		15	S3	SM24	60						30	30	30		
					1245										

Expected Revenue Statement in Five Years

Year	Total Revenue (Year)	S#	Semester #	Semester	Total Revenue (Semester)	1st Intake	2nd Intake	3rd Intake	4th Intake	5th Intake	6th Intake	7th Intake	8th Intake	9th Intake	10th Intake
Year1	8,024,500	1	S1	F19	2,109,600	2,109,600									
		2	S2	SP20	4,126,600	1,489,600	2,637,000								
		3	S3	SM20	1,788,300	794,800	993,500								
Year2	17,419,200	4	S1	F20	6,516,000	1,489,600	1,862,000	3,164,400							
		5	S2	SP21	8,518,000	1,258,000	1,862,000	2,234,400	3,164,400						
		6	S3	SM21	2,384,400	0	0	1,192,200	1,192,200						
Year3	21,110,300	7	S1	F21	9,205,700		1,572,500	2,234,400	2,234,400	3,164,400					
		8	S2	SP22	9,520,200			1,887,000	2,234,400	2,234,400	3,164,400				
		9	S3	SM22	2,384,400		0	0	1,192,200	1,192,200					
Year4	21,424,800	10	S1	F22	9,520,200				1,887,000	2,234,400	2,234,400	3,164,400			
		11	S2	SP23	9,520,200				1,887,000	2,234,400	2,234,400	3,164,400			
		12	S3	SM23	2,384,400				0	0	1,192,200	1,192,200			
Year5	21,424,800	13	S1	F23	9,520,200					1,887,000	2,234,400	2,234,400	3,164,400		
		14	S2	SP24	9,520,200					1,887,000	2,234,400	2,234,400	3,164,400		
		15	S3	SM24	2,384,400					0	0	1,192,200	1,192,200		
					89,403,600										

Year	Total Revenue (Year)	Total Expenses (Semester)	Net Earning	S#	Semester #	Semester	Total Revenue (Semester)
Year1	8,024,500	370,000	7,654,500	1	S1	F19	2,109,600
				2	S2	SP20	4,126,600
				3	S3	SM20	1,788,300
Year2	17,419,200	407,000	17,012,200	4	S1	F20	6,516,000
				5	S2	SP21	8,518,000
				6	S3	SM21	2,384,400
Year3	21,110,300	447,700	20,662,600	7	S1	F21	9,205,700
				8	S2	SP22	9,520,200
				9	S3	SM22	2,384,400
Year4	21,424,800	492,470	20,932,330	10	S1	F22	9,520,200
				11	S2	SP23	9,520,200
				12	S3	SM23	2,384,400
Year5	21,424,800	541,717	20,883,063	13	S1	F23	9,520,200
				14	S2	SP24	9,520,200
				15	S3	SM24	2,384,400

INTRODUCTION OF ISLAMIC STUDIES COURSES FOR GROOMING OF STUDENTS

Sr. No.	Proposed Title of Courses	Course Codes	Credit Hours
1.	Islamic Ethical Principles and Contemporary Issues	ISL 105	1
2.	Quranic Arabic Language – 1 (QAL -1)	ISL 106	1
3.	Quranic Arabic Language – 2 (QAL -2)	ISL 200	1
4.	The Journey of Wisdom {Complete Life of Prophet Muhammad (PBUH)}	ISL 202	1
5.	Knowledge, Islamic Concepts, and Contribution of Muslim Scientists	ISL 301	1
6.	Role of Youth in Community Development in Islamic Perspective	ISL 302	1

- ❖ Proposed courses are to be taught gradually to undergraduate students, one course for each semester.
- ❖ Content may be modified with the approval of concerned authority.

ISLAMIC ETHICAL PRINCIPLES AD CONTEMPORARY ISSUES

Course Name	Islamic Ethical Principles and Contemporary Issues		Prepared on	August, 2019				
Course Code	ISL 105							
Credit Hours	1							
Course Prerequisite								
Prerequisite Code			Revised on	As per Requirement				
Course Type	Compulsory course							
Program								
Semester								
Course Description								
<p>1) The course introduces students about Ethics and its Significance in general.</p> <p>2) The course tries to incorporate in students Esteemed Qualities of Character and obviate them from flaws.</p> <p>3) The course would also throw light on contemporary issues in modern world in detail.</p>								
Course Learning Outcomes								
CLO #	Description							
1.	To Develop Creative and Innovative Attitude							
2.	To Develop Ethical Behavior in Social and Professional work environments							
3.	To Prepare a Responsible and Effective Muslim							
Teaching & Learning Methodology								
Teaching and learning approaches should foster a sense of understanding and respect, and sensitize students with emotions and feelings of tolerance towards others.								
<p>1) Lecture Method</p> <p>2) Audio Visual Aids</p> <p>3) Interactive Method</p>								
Text Book and References								
Course Pack of Islamic Studies & Class Hand-outs								
Reference Books:								
<p>1) Al-Quran</p> <p>2) Hadith; Riad utt Saliheen by Imam Novi رحمۃ اللہ علیہ</p> <p>3) The Reconstruction of Religious Thought in Islam; Dr. Allama Muhammad Iqbal, Oxford University press.</p> <p>4) اسلام کا معاشرتی نظام از ڈاکٹر خالد علوی</p>								
Week-wise Course Outline								
week / Session	Contents							
1.	Introduction to Ethics <ul style="list-style-type: none"> ✓ Definition ✓ Sources of Islamic Ethics ✓ Significance 							

2.	What to Cultivate – I ✓ Sincerity ✓ Integrity ✓ Honesty
3.	What to Cultivate – II ✓ Unity ✓ Faith ✓ Discipline
4.	What to Cultivate – III ✓ Determination ✓ Responsibility ✓ Moderation
5.	What to Cultivate – IV ✓ Courage ✓ Patience ✓ Optimism
6.	What to Cultivate – V ✓ Dignity ✓ Humbleness ✓ Chastity
7.	What to Obviate – I ✓ Falsehood ✓ Injustice ✓ Anger
8.	What to Obviate – II ✓ Pride ✓ Meagerness ✓ Suspicion
9.	MID-TERM EXAMS
10.	What to Obviate – III ✓ Greed ✓ Rudeness ✓ Jealousy
11.	What to Obviate – IV ✓ Deceit ✓ Hypocrisy ✓ Immorality
12.	What to Obviate – V ✓ Cursing ✓ Slander ✓ Backbiting
13.	Contemporary Issues – I ✓ Polygamy ✓ Marriage to Non-Muslims ✓ Violence in Marriage ✓ Divorce : Man's right

14.	Contemporary Issues - 1I ✓ Abortion ✓ Population Control ✓ Hijaab ✓ Inheritance
15.	Contemporary Issues – III ✓ Capital Punishment ✓ Theft
16.	Contemporary Issues – IV ✓ Islam Spread by sword ✓ Suicide bombing ✓ Terrorism ✓ Jihaad
17.	Contemporary Issues – V ✓ Adultery ✓ Homosexuality ✓ Apostasy
18.	FINAL EXAMS

QURANIC ARABIC LANGUAGE – 1 (QAL-1)

Course Name	Quranic Arabic Language – 1 (QAL-1)	Prepared on	August, 2019		
Course Code	ISL 106				
Credit Hours	1				
Course Prerequisite	Islamic Ethical Principles and Contemporary Issues				
Prerequisite Code	ISL 105	Revised on	As per Requirement		
Course Type	Compulsory course				
Program					
Semester					
Course Description					
<p>1) Complete Salah (Namaz).</p> <p>2) Some daily Duas (Azkaar)</p> <p>3) Seven Surahs & several Ahadith along with lessons to be learned from them.</p> <p>4) Basic Arabic grammar, word classification as حرف (Letter), اسم (Noun) & فعل (Verb), conjugation of verbs & concept of root letters & abwab (ابواب).</p> <p>5) Inspirational Ayaats & Ahadith to proof that Qur'an is easy to understand & the best deed to be performed.</p>					
Course Learning Outcomes					
CLO #	Description				
1.	Understand Salah (Namaz) and Duas (Azkaar), as required in connection with our daily lives.				
2.	Understand 50% of the words of Qur'an [Learning of 232 words occurred in the Qur'an 41,111 times].				
3.	Demonstrate an appropriate understanding of basic Arabic grammar & dialogue (عربی بول چال).				
4.	Ability to apply in the daily lives the lessons from the Qur'anic verses & Ahadith learned in this course.				
Teaching & Learning Methodology					
Teaching and learning approaches should foster a sense of understanding and respect, and sensitize students with emotions and feelings of tolerance towards others.					
<p>1) Audio Visual Aids</p> <p>2) Interactive Method</p>					
Text Book and References					
<p>1) Let's Understand Qur'an & Salah – the easy way [50% Qur'anic words in Urdu] by Dr. Abdulazeez Abdul Raheem published by Alfalal Manzil Trust, E-11/4, Islamabad.</p> <p>2) *(For students who have difficulty with Urdu language, English version of the book is also available).</p> <p>3) Course Pack of Islamic Studies & Class Hand-outs</p> <p>4) Vocabulary Booklet – 85% of the Qur'anic words by Dr. Abdul Azeez Abdul Raheem.</p> <p>5) Taleem ul Qur'an (Juzz-1) by Sabir Qarni published by Idarae Taleem-ul-Qur'an, Lahore</p>					
Week-wise Course Outline					
week / Session	Contents				

1.	<ul style="list-style-type: none"> ✓ Introduction & Objectives ✓ Qur'an is Easy ✓ Ta'awwuz تَعُوذُ
2.	<ul style="list-style-type: none"> ✓ Revision of Lesson 1a ✓ Introduction to TPI [Total Physical Interaction] ✓ Detached Pronouns هُوَ، هُمْ-- ✓ Motivational Tip ✓ In class oral assessment/quiz
3.	<ul style="list-style-type: none"> ✓ سُورَةُ الْفَاتِحَةِ [1-3] ✓ Nouns – اسم Singular / Plural ✓ Complete Sentence هُوَ مُسْلِمٌ ، هُمْ مُسْلِمُونَ -- ✓ Dialogue with هلْ ✓ Motivational Tip <p>In class oral assessment/quiz</p>
4.	<ul style="list-style-type: none"> ✓ سُورَةُ الْفَاتِحَةِ [4-5] ✓ Attached Pronouns ✓ رَبُّهُ، رَبُّهُمْ -- ✓ Dialogue with مَنْ ، مَا ✓ Motivational Tip <p>In class oral assessment/quiz</p>
5.	<ul style="list-style-type: none"> ✓ سُورَةُ الْفَاتِحَةِ [6-7] ✓ Complete Sura-tul Fatiha ✓ Hadith regarding Sura-tul Fatiha ✓ 12 Habits
6.	<ul style="list-style-type: none"> ✓ دِينُهُ، كِتَابُهُ، هِيَ رَبُّهَا [Noun + Pronoun] ✓ Feminine Gender + Singular/Plural ✓ Dialogue with مَنْ ، مَا ✓ Revision of Grammar up to now [Nouns] ✓ Motivational Tip <p>In class oral assessment/quiz</p>
7.	<ul style="list-style-type: none"> ✓ Adhan اذان ✓ Prepositions حرف جر لَ، مِنْ، عَنْ
8.	<ul style="list-style-type: none"> ✓ Dialogue with أَ ✓ Motivational Tip ✓ In class oral assessment/quiz
9.	MID-TERM EXAMS
10.	<ul style="list-style-type: none"> ✓ Fajr Adhan اذان Iqamah & Dua after Wudu وضو ✓ Prepositions حرف جر بِ، فِي، عَلَى ✓ Dialogue with هلْ ✓ Motivational Tip <p>In class oral assessment/quiz</p>
11.	<ul style="list-style-type: none"> ✓ Ruku & Sujood Prayers ✓ Dua after Ruku ✓ Prepositions حرف+اسم ظرف إِلَى، مَعْ، عَنْ ✓ Dialogue with هلْ ✓ Motivational Tip

	In class oral assessment/quiz
12.	<ul style="list-style-type: none"> ✓ Tashah-hud تشهيد ✓ Effect of Preposition on Verb ✓ Demonstrative Pronouns ✓ هذَا، هُوَلَاءُ، ... ✓ Dialogue with أ ✓ Motivational Tip ✓ In class oral assessment/quiz
13.	<ul style="list-style-type: none"> ✓ Revision of Lesson 8a ✓ Durood درود & Dua after Durood ✓ [رَبِّ اجْعَلْنِي ---]
14.	<ul style="list-style-type: none"> ✓ Revision of Grammar ✓ [Prepositions + Demonstrative Pronouns] ✓ فعل ماضى: فَعَلَ ، فَتَحَ ، جَعَلَ ✓ Dialogue with هل ✓ Motivational Tip ✓ In class oral assessment/quiz
15.	✓ Prayers after Salah & Thana ثناء
16.	<ul style="list-style-type: none"> ✓ فعل ماضى: نَصَرَ ، خَلَقَ ، ذَكَرَ ، عَبَدَ ✓ Examples from the end of the book
17.	<ul style="list-style-type: none"> a) Dialogue with هل & ما b) Motivational Tip c) In class oral assessment/quiz
18.	FINAL EXAMS

QURANIC ARABIC LANGUAGE – 2 (QAL-2)

Course Name	Quranic Arabic Language – 2 (QAL-2)	Prepared on	August, 2019												
Course Code	ISL 200														
Credit Hours	1														
Course Prerequisite	Quranic Arabic Language – 1 (QAL-1)														
Prerequisite Code	ISL 106	Revised on	As per Requirement												
Course Type	Compulsory course														
Program															
Semester															
Course Description															
<p>The primary objective of this course is to enable a common Muslim to understand Qur'an & bring it into his/her daily life for success in Duniya & Aakhirah by way of:</p> <ol style="list-style-type: none"> 1) Learning Arabic vocabulary & basic grammar through TPI [Total Physical Interaction] & Dialogue. 2) Using Salah (Namaz) & basic dua's (azkaar) as the fundamental means to acquire the understanding of 50% of the words of Qur'an. 3) Using the 'tried & tested 'methodology of Dua – Evaluate – Plan – Propagate to instill the spirit of acquiring a strong faith (إيمان), good deeds (اعمال صالح) & noble manners (أخلاق). 															
Course Learning Outcomes															
<table border="1"> <thead> <tr> <th>CLO #</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1.</td><td>Complete Salah (Namaz).</td></tr> <tr> <td>2.</td><td>Some daily Duas (Azkaar)</td></tr> <tr> <td>3.</td><td>Seven Surahs & several Ahadith along with lessons to be learned from them.</td></tr> <tr> <td>4.</td><td>Basic Arabic grammar, word classification as حرف (Letter), اسم (Noun) فعل & (Verb), conjugation of verbs & concept of root letters & abwab (ابواب).</td></tr> <tr> <td>5.</td><td>Inspirational Ayaats & Ahadtih to proof that Qur'an is easy to understand & the best deed to be performed.</td></tr> </tbody> </table>				CLO #	Description	1.	Complete Salah (Namaz).	2.	Some daily Duas (Azkaar)	3.	Seven Surahs & several Ahadith along with lessons to be learned from them.	4.	Basic Arabic grammar, word classification as حرف (Letter), اسم (Noun) فعل & (Verb), conjugation of verbs & concept of root letters & abwab (ابواب).	5.	Inspirational Ayaats & Ahadtih to proof that Qur'an is easy to understand & the best deed to be performed.
CLO #	Description														
1.	Complete Salah (Namaz).														
2.	Some daily Duas (Azkaar)														
3.	Seven Surahs & several Ahadith along with lessons to be learned from them.														
4.	Basic Arabic grammar, word classification as حرف (Letter), اسم (Noun) فعل & (Verb), conjugation of verbs & concept of root letters & abwab (ابواب).														
5.	Inspirational Ayaats & Ahadtih to proof that Qur'an is easy to understand & the best deed to be performed.														
Teaching & Learning Methodology															
<p>Teaching and learning approaches should foster a sense of understanding and respect, and sensitize students with emotions and feelings of tolerance towards others.</p> <ul style="list-style-type: none"> ✓ Audio and Visual Aids ✓ Interactive Method 															
Text Book and References															
<ol style="list-style-type: none"> 1) Vocabulary Booklet – 85% of the Qur'anic words by Dr. Abdul Azeez Abdul Raheem. 2) Taleem ul Qur'an (Juzz-1) by Sabir Qarni published by Idarae Taleem-ul-Qur'an, Lahore 															
Week-wise Course Outline															

week / Session	Contents
1.	<ul style="list-style-type: none"> ✓ Revision of Lessons 1 to 10, Part [a & b] ✓ Sura-tul Ikhlaas سُورَةُ الْإِخْلَاصِ
2.	<ul style="list-style-type: none"> ✓ ضَرَبَ، سَمِعَ، عَلِمَ، عَمِلَ ✓ Dialogue with هل ✓ Motivational Tip <p>In class oral assessment/quiz</p>
3.	<ul style="list-style-type: none"> ✓ Revision of Lesson 11a ✓ Sura-tul Falaq سُورَةُ الْفَالَقِ
4.	<ul style="list-style-type: none"> ✓ Revision of Grammar [Perfect Tense] ✓ فعل مضارع : يَعْلُمُ، يَجْعَلُ، يَفْتَحُ ✓ Dialogue with هل ✓ Motivational Tip <p>In class oral assessment/quiz</p>
5.	<ul style="list-style-type: none"> ✓ Sura-tun Naas سُورَةُ النَّاسِ ✓ يَنْصُرُ، يَذْكُرُ، يَخْلُقُ، يَعْبُدُ ✓ Dialogue with هل ✓ Motivational Tip <p>In class oral assessment/quiz</p>
6.	<ul style="list-style-type: none"> ✓ Sura-tul Asr سُورَةُ الْأَعْصِرِ ✓ بَضْرِبٍ، يَسْمَعُ، يَعْلَمُ، يَعْمَلُ ✓ Dialogue with هل & مَاذَا ✓ Motivational Tip <p>In class oral assessment/quiz</p>
7.	<ul style="list-style-type: none"> ✓ Sura-tun Nasr سُورَةُ النَّصْرِ ✓ فعل أمر و نهي: إفعُلْ، إفْتَحْ، إجْعَلْ ✓ Add examples from the end of the book ✓ Dialogue with Imperative & سَوْفَ ✓ Motivational Tip <p>In class oral assessment/quiz</p>
8.	<ul style="list-style-type: none"> ✓ Sura-tul Kaafiroon سُورَةُ الْكُفَّارِ
9.	MID-TERM EXAMS
10.	<ul style="list-style-type: none"> فعل أمر و نهي: انصُرْ، اذْكُرْ، أَعْبُدْ، أَخْلُقْ ✓ Dialogue with Imperative & سَوْفَ ✓ Motivational Tip <p>In class oral assessment/quiz</p>
11.	<ul style="list-style-type: none"> ✓ Purpose of Revelation كِتَابٌ أَنزَلْنَا بِلَغْوَا عَنِّي --- ✓ Hadith فَعَلَ أَمْرٌ وَنَهَى: اصْرِبْ، إسْمَعْ، إغْلُمْ، إعْمَلْ ✓ Dialogue with Imperative & سَوْفَ ✓ Motivational Tip <p>In class oral assessment/quiz</p>
12.	<ul style="list-style-type: none"> ✓ The Qur'an is Easy to Learn

13.	<ul style="list-style-type: none"> ✓ Revision of Grammar [Imperative & Prohibitive] فَاعِل، مَفْعُول، فَعْلٌ: فَعَلَ، فَتَحَ، جَعَلَ، نَصَرَ، خَلَقَ، ذَكَرَ ✓ Dialogue with هل <p>In class oral assessment/quiz</p>
14.	<ul style="list-style-type: none"> ✓ Supplication & Method of Learning
15.	<ul style="list-style-type: none"> ✓ Revision of Grammar ✓ [Active Participle, Passive Participle & Verbal Noun] فَاعِل، مَفْعُول، فَعْلٌ: عَبَدَ، ضَرَبَ، سَمِعَ ✓ مونث کے صیغے ✓ Concept of Root Letters & Baab [Page 140] ✓ Dialogue with هل <p>In class oral assessment/quiz</p>
16.	<ul style="list-style-type: none"> ✓ سُورَةُ الْبَقَرَةَ [1-5] آيَاتُ الْكُرْسِينَ
17.	<ul style="list-style-type: none"> ✓ Sarf-e-Sagher [Short Table] ✓ Verb + Pronouns فَعْل، نَصَرَ، ضَرَبَ، سَمِعَ <p>In class oral assessment/quiz</p>
18.	FINAL EXAMS

THE JOURNEY OF WISDOM

Course Name	The Journey of Wisdom	Prepared on	August, 2019		
Course Code	ISL 202				
Credit Hours	1				
Course Prerequisite	Quranic Arabic Language – 2 (QAL-2)				
Prerequisite Code	ISL 200	Revised on	As per Requirement		
Course Type	Compulsory course				
Program					
Semester					
Course Description					
To teach students;					
<ol style="list-style-type: none"> 1) Brief History of Prophet (PBUH) 2) Impact of the life of Holy Prophet (PBUH) on human life 					
Course Learning Outcomes					
CLO #	Description				
1.	The life of Prophet Muhammad (PBUH) in Makkah				
2.	The life of Prophet Muhammad (PBUH) in Madinah				
3.	Important teachings, decisions and actions of Prophet Muhammad (PBUH)				
Teaching & Learning Methodology					
Teaching and learning approaches should foster a sense of understanding and respect, and sensitize students with emotions and feelings of tolerance towards others.					
<ol style="list-style-type: none"> 1) Lecture Method 2) Audio Visual Aids 3) Interactive Method 					
Text Book and References					
<ol style="list-style-type: none"> 1. Zia un Nabi by Peer Karam Shah Al Azhari 2. The Sealed Nectar (الرحيق المختوم) by Safi Ud Din Mubarak Puri 					
Week-wise Course Outline					
week / Session	Contents				
1.	✓ Introduction and Importance of Prophet-hood				
2.	✓ Childhood of Prophet Muhammad (PBUH) and Teachings for Children				
3.	✓ Youth of Prophet (PBUH) and Teachings for Youth				

4.	✓ Marriage and trade experience of Prophet Muhammad (PBUH), the lessons derived from it	
5.	✓ Thinking process of Prophet Muhammad (PBUH) and 1 st Revelation	
6.	✓ Life of Prophet Muhammad (PBUH) in Makkah after Revelation till Hijrat and Lessons derived from it	
7.	✓ Hijrat and Jihad, Concepts and Impact	
8.	✓ Moakhat (Brotherhood) and Foundation of Riasat-e-Madinah	
9.	MID-TERM EXAMS	
10.	✓ Meesaq-e-Madinah and Relations with Minorities	
11.	Establishment of Riasat-e-Madinah ✓ Development of Social and Educational system	
12.	Establishment of Riasat-e-Madinah ✓ Development of Economic system	
13.	✓ Concept of Jihad in Islam, Ghazawat and their Impact on Islamic History (Part-1)	
14.	✓ Concept of Jihad in Islam, Ghazawat and their Impact on Islamic History (Part-2) and Conquest of Makkah	
15.	✓ Khutba e Haj Tul Wada (Part-1). The Last Sermon of Hazrat Muhammad PBUH	
16.	✓ Khutba e Haj tul wada (Part-2). The Last Sermon of Hazrat Muhammad PBUH	
17.	✓ Meesaq-e-Madinah and Relations with Minorities	
18.	FINAL EXAMS	

KNOWLEDGE, ISLAMIC CONCEPTS, AND CONTRIBUTION OF MUSLIM SCIENTISTS

Course Name	Knowledge, Islamic Concepts, and contribution of Muslim Scientists	Prepared on	August, 2019	
Course Code	ISL 301			
Credit Hours	1			
Course Prerequisite	The Journey of Wisdom			
Prerequisite Code	ISL 202	Revised on	As per Requirement	
Course Type	Compulsory course			
Program				
Semester				
Course Description				
<p>1) Contribution of Muslim Scientists 2) Significance and importance of Muslims Scientists and their Role in various scientific fields.</p>				
Course Learning Outcomes				
CLO #	Description			
1.	The contribution of Muslim Scientists towards various fields of sciences.			
2.	Important Scientific achievements of Muslim scientists.			
3.	Identifying some important figures who have left a mark in history.			
Teaching & Learning Methodology				
Teaching and learning approaches should foster a sense of understanding and respect, and sensitize students with emotions and feelings of tolerance towards others.				
<p>1) Lecture Method 2) Audio Visual Aids 3) Interactive Method</p>				
Text Book and References				
<p>1) Class Handouts 2) Bible, Quran and Science by Mauris Bokaye. Translator: Sana Ul Haq Siddiqui 3) Science and Islam, BBC documentary 4) Encyclopedia Britannica Volume 14, 25,1 5) Encyclopedia of Islam Volume 3 6) Scientific achievements of Muslims , book by Dr. G Qadir Loon, 1998</p>				
Week-wise Course Outline				
week / Session	Contents			
1.	Concept of Knowledge in Islam			
2.	Sources of Knowledge			

3.	Mohammad Ibn-e-Mosa Al Khawarizmi, Bano Mosa, Umar Khayyam - Mathematics (8 th Century)
4.	Abu Yousaf Al Kindi, Abu Bakkar Razi, Ibn-e-Sina – Physics (10 th Century)
5.	Jabir bin Hayyan, Abu Al Hakeem Al Salehi Al Kai – Chemistry (8 th Century)
6.	Abu Mohammad Ibn-e-Betar, Ibn-e-Baja – Botany (11 th -12 th Century)
7.	Jahiz Basri, Mohammad Bin Mosa Dameeri – Zoology (8 th , and 14 th Century)
8.	Abu Zakariya Ashbeeli, Ibn-e-Abdoon – Agriculture (12 th Century)
9.	MID-TERM EXAMS
10.	Al Farazi, Al Batani, Ibn-e-Younas – Astronomy (8 th Century)
11.	Bu Ali Sina, Al Farabi – Medicine (10 th Century)
12.	Abu Tayyab Sanad, Al Beroni, Naseer udin Toosi – Geology (13 th Century)
13.	Abu Zaid Balkhi, Salman Bin Ahmad Mehri , Abu Ubaid Al Bakri – Geography (10 th -11 th Century)
14.	Ibn-e- Ishaq, Ibn-e-Hisham – History (9 th Century)
15.	Ibn-e-Rushd and Ibn-e-Khaldoon – Philosophy (10 th and 14 th Century)
16.	Technologies based on Muslim's Contributions
17.	Technologies based on Muslim's Contributions
18.	FINAL EXAMS

ROLE OF YOUTH IN COMMUNITY DEVELOPMENT IN ISLAMIC PERSPECTIVE

Course Name	Role of Youth in Community Development in Islamic Perspective	Prepared on	August, 2019		
Course Code	ISL 302				
Credit Hours	1				
Course Prerequisite	Knowledge, Islamic Concepts, and contribution of Muslim Scientists				
Prerequisite Code	ISL 301	Revised on	As per Requirement		
Course Type	Compulsory course				
Program					
Semester					
Course Description					
The Social system of an Islamic Society, its various units and fragments. The responsibilities of a human being, specifically role of Muslim Youth in the betterment of society.					
Course Learning Outcomes					
CLO #	Description				
1.	Students will gain knowledge about ✓ Different units of society ✓ Health, Education, obedience of Law and other basic necessities of human life so that He/ She may become a responsible citizen ✓ To enable the students to prosper in their field of study and life				
Teaching & Learning Methodology					
Teaching and learning approaches should foster a sense of understanding and respect, and sensitize students with emotions and feelings of tolerance towards others.					
1) Lecture Method 2) Audio Visual Aids 3) Interactive Method					
Text Book and References					
1) Introduction to Islam Dr. Hamidullah 2) Family Life in Islam Khursheed Ahmed 3) Islam its foundations and concepts Muhammad bin Abdullah 4) The key to understanding Islam Abdur Rehman bin Abdulkarim 5) Principles of Islamic Political system Tanveer Hussain 6) Social System of Islam S. Abul Ala Moudoodi 7) Modern western thought LALITA 8) Islamic Economics and Finance Masoud Alam Choudhry					
Week-wise Course Outline					
week / Session	Contents				
1.	✓ Concept of community and its units ✓ Concept of development in the light of Islamic and Modern world				

2.	<ul style="list-style-type: none"> ✓ Education, Need of education for the community and role of university graduates, Guidance, tools, sources etc.
3.	<p>Health</p> <ul style="list-style-type: none"> ✓ To teach the students about how they can create awareness in the society regarding health and hygiene ✓ To enable the students in developing an understanding about utilizing the resources available, so that they can communicate effectively with the society
4.	<p>Pollution</p> <ul style="list-style-type: none"> ✓ Types of pollution ✓ Teaching the students ways to cleanse the society of pollution ✓ Reforestation ✓ Rules about the city life.
5.	<p>Obedience of the Law</p> <ul style="list-style-type: none"> ✓ Developing a consciousness in the society on abiding by the law ✓ Educating the students about basic human rights in the light of Islamic and global rules ✓ Educating the students about following the rules established by society in their everyday life
6.	<p>Social system of Islam (1)</p> <ul style="list-style-type: none"> ✓ Role of family in the development of society, Marriage, building of a home, rules and regulations of divorce
7.	<p>Social system of Islam (2)</p> <ul style="list-style-type: none"> ✓ Family relationships and duties, Parents, spouses, children and relatives
8.	<p>Economic System of Islam (1)</p> <ul style="list-style-type: none"> ✓ Concepts of economic development ✓ Fundamentals of the Islamic Economic System.
9.	<p>MID-TERM EXAMS</p>
10.	<p>Economic System of Islam (2)</p> <ul style="list-style-type: none"> ✓ Concept of Halal and Haram in the light of Quran and Sunnah ✓ Business, trade, types of employment and their moral requirements
11.	<p>Neighbors – The human and Islamic concept</p> <ul style="list-style-type: none"> ✓ Social issues in modern age ✓ The rights of the neighbor and Islamic teachings
12.	<p>Relations with Non-Muslims</p> <ul style="list-style-type: none"> ✓ Relations with Non-Muslims in the light of Islamic education ✓ Charter of Madinah ✓ Relations with non-Muslims during the time of Prophet and the Caliphate Rashida and basic human rights ✓ Freedom of Religion
13.	<ul style="list-style-type: none"> ✓ The welfare of the orphans, the elderly, the disabled, and the Islamic teachings in the light of Quran and Sunnah
14.	<p>Pakistan</p> <ul style="list-style-type: none"> ✓ The thought of Pakistan, the teachings of Iqbal and Quaid-e-Azam ✓ The Pakistan movement, role of youth, mentors, religious scholars and journalists ✓ The political and religious basis of Pakistan

15.	<p>Political system of Islam and Pakistan-I</p> <ul style="list-style-type: none"> ✓ Islamic system of politics and state ✓ The time of the Prophet ✓ The time of Caliphate Rashida ✓ The Teachings of Quran and Sunnah ✓ The state and political system of Pakistan 	
16.	<p>Political system of Islam and Pakistan-II</p> <ul style="list-style-type: none"> ✓ The Teachings of Quran and Sunnah ✓ The state and political system of Pakistan 	
17.	<p>Sports and Youth</p> <ul style="list-style-type: none"> ✓ The role of sports in the development of society ✓ The teachings of Islam and sports ✓ Responsibilities of youth, government agencies and civil society in promoting sports 	
18.	FINAL EXAMS	

Appendage 3421

CURRICULUM ROAD MAPS & COURSE CODES
BACHELOR OF SCIENCE IN PUBLIC HEALTH (BSPH)
AT BUMDC

Campus: BUMDC OR (depending on availability of infrastructure, the Karachi Campus)
 Department: Initiated by Department of Community Health Sciences
 Program Title: Bachelor of Science in Public Health
 Program Level: _____
 Total Duration of Program: Four Years (as per (HEC))
 Total Number of semesters: 8 Semesters
 Total Credit Hours: 130 Credit Hours

Semester-1

Sr.No.	Pre-requisite Course Code	Course Code (To be vetted by Exam Dte)	Course Title	Credit Hours	Theory	Lab (if any)
1	FSc/FA	XXX XXX	English 1	3	Yes	Tutorial
2		XXX XXX	Pakistan Studies	2	Yes	Tutorial
3		XXX XXX	Mathematics	3	Yes	Tutorial
4		XXX XXX	Life Sciences Biology	3	Yes	Yes
5		XXX XXX	Sociology of Health and Disease	3	Yes	Yes
6		XXX XXX	Basic Computer Skills	3	Yes	Yes - computer lab
Total Credit Hours in Semester-1				17		

Semester-2

Sr.No .	Pre-requisite Course Code	Course Code (To be vetted by Exam Dte)	Course Title	Credit Hours	Theory	Lab (if any)
1	Semester 1	XXX XXX	English 2	3	Yes	Tutorial
2		XXX XXX	Ethics/Islamic Studies	2	Yes	Tutorial
3		XXX XXX	Basic Statistics	3	Yes	Yes
4		XXX XXX	Principles of Psychology	3	Yes	Tutorial
5		XXX XXX	Medical Anthropology	3	Yes	Tutorial
6		XXX XXX	Personal Hygiene	3	Yes	Yes
Total Credit Hours in Semester-2				17		

Semester-3

Sr.No.	Pre-requisite Course Code	Course Code (To be vetted by Exam Dte)	Course Title	Credit Hours	Theory	Lab (if any)
1		XXX XXX	English 3	3	Yes	Tutorial
2		XXX XXX	Basic Computer Literacy	3	Yes	Yes-computer lab
3		XXX XXX	Population Dynamics	3	Yes	Tutorial
4		XXX XXX	Primary Health Care	3	Yes	Tutorial
5		XXX XXX	Concept of Health and Disease	3	Yes	Tutorial
Total Credit Hours in Semester-3				15		

Semester-4

Sr.No.	Pre-requisite Course Code	Course Code (To be vetted by Exam Dte)	Course Title	Credit Hours	Theory	Lab (if any)
1		XXX XXX	English 4 (any other subject may be offered)	3		
2		XXX XXX	Professional Ethics	3		
3		XXX XXX	Basic Epidemiology	3		
4		XXX XXX	Basic Biostatistics	3		
5		XXX XXX	Health Promotion, Advocacy & Social Mobilization	3		
Total Credit Hours in Semester-4				15		

Semester-5

Sr.No.	Pre-requisite Course Code	Course Code (To be vetted by Exam Dte)	Course Title	Credit Hours	Theory	Lab (if any)
1		XXX XXX	Community Nutrition	3	Yes	Field visit
2		XXX XXX	Community Pediatrics	3	Yes	Field visit
3		XXX XXX	Fundamental Principles of Infectious Disease	3	Yes	Tutorial
4		XXX XXX	Epidemiology of Infectious Diseases	3	Yes	Tutorial
5		XXX XXX	Non-Communicable Disease Epidemiology	3	Yes	Tutorial

Total Credit Hours in Semester-5	15		
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Semester-6

Sr.No.	Pre-requisite Course Code	Course Code (To be vetted by Exam Dte)	Course Title	Credit Hours	Theory	Lab (if any)
1		XXX XXX	Reproductive Health	3	Yes	Yes
2		XXX XXX	Environment& Occupational Health	3	Yes	Yes
3		XXX XXX	Health Policy and Management	3	Yes	Tutorial
4		XXX XXX	Health Planning	3	Yes	Tutorial
5		XXX XXX	District Health Management	3	Yes	Tutorial
Total Credit Hours in Semester-6				15		

Semester-7

Sr.No.	Pre-requisite Course Code	Course Code (To be vetted by Exam Dte)	Course Title	Credit Hours	Theory	Lab (if any)
1		XXX XXX	Mental Health	3	Yes	Tutorial
2		XXX XXX	Health Marketing (compulsory elective)	3	Yes	Tutorial
3		XXX XXX	Research Methodology	3	Yes	Yes-computer lab
4		XXX XXX	Elective 1	3	Yes	Yes
5		XXX XXX	Elective 2	3	Yes	Yes
6		XXX XXX	Research Project	3	Yes	Yes
Total Credit Hours in Semester-7				18		

Semester-8

Sr.No.	Pre-requisite Course Code	Course Code (To be vetted by Exam Dte)	Course Title	Credit Hours	Theory	Lab (if any)
1		XXX XXX	Microbiology	3	Yes	Yes
2		XXX XXX	Entomology	3	Yes	Yes
3		XXX XXX	Parasitology	3	Yes	Yes
4		XXX XXX	Elective 3	3	Yes	Tutorials
5		XXX XXX	Elective 4	3	Yes	Tutorials
6		XXX XXX	Research Project	3	Yes	Comp. Lab.
Total Credit Hours in Semester-8				18		

List of Elective Courses*¹

Sr.No.	Pre-requisite Course Code	Course Code (To be vetted by Exam Dte)	Course Title	Credit Hours	Theory	Lab (if any)
1		XXX XXX	Prison Health	3	Yes	Field visit
2		XXX XXX	International Health/global Health	3	Yes	Tutorials
3		XXX XXX	Health Economics	3	Yes	tutorials
4		XXX XXX	Health Financing	3	Yes	tutorials
5		XXX XXX	Health Inventory Management	3	Yes	Field visit
6		XXX XXX	Disaster Management	3	Yes	Field visit
7		XXX XXX	Quality Management in Health Care	3	Yes	Field visit
8		XXX XXX	School Health	3	Yes	Field visit
9		XXX XXX	Health Information System	3	Yes	Field visit
10		XXX XXX	Health Project Management	3	Yes	Field visit
11		XXX XXX	Art and Public Health	3	Yes	Field visit

12		XXX XXX	Community Dentistry	3	Yes	Field visit
13		XXX XXX	Community Psychiatry	3	Yes	Field visit
14		XXX XXX	Community Nursing	3	Yes	Field visit
15		XXX XXX	Food Safety	3	Yes	Field visit
16		XXX XXX	Health Marketing	3	Yes	Field visit
17		XXX XXX	Addiction and Social Rehabilitation	3	Yes	Field visit
18		XXX XXX	Nuclear Medicine	3	Yes	Field visit
19		XXX XXX	Sports Medicine	3	Yes	Field visit
20		XXX XXX	Adolescent and Sexual Health	3	Yes	Tutorial/field visit
21		XXX XXX	Risk Management	3	Yes	Field visit
22		XXX XXX	Geriatrics	3	Yes	Field visit/tutorials

¹ * All the possible recommended Elective Courses have been listed, however each year 3-4 new courses will be introduced according to the availability of faculty and having adequate students to opt for an elective. Note that 4 electives must be selected by students (one is compulsory).

NEW PROGRAMME PROPOSAL

A. ACADEMIC DETAILS	
1	Faculty/Department: Department of Public Health
2	Title of the Programme: (to be printed on Degree/Transcript) BSc. Public Health
3	Mission of the Programme: The mission of the Bachelor of Science in Public Health (BSPH) is to preserve, promote, and improve the health and well-being of populations, communities, and individuals.
4	<p>Objectives of the Programme:</p> <ol style="list-style-type: none"> 1. Produce competent, committed and skilled public health professionals. 2. Provide a foundation for choosing a relevant Track in Public Health in future. 3. Prepare a skilled workforce in public health auxiliary and support services 4. Prepare leadership in public health. 5. Develop, administer and evaluate health policies and programs. 6. Participate directly in efforts to improve the health of the community using community-based and health systems' assessment of preventive services. 7. Conduct basic and applied research relevant to the description, risk factors, and interventions for the resolution of health problems in the human populations.
5	<p>Outcomes of the Programme:</p> <p>At the end of the program, the graduate is expected to:</p> <ol style="list-style-type: none"> 1. Detect, prevent and manage common public health problems in Pakistan 2. Acquire basic computer skills 3. Supervise, monitor and manage public health issues 4. Be effective communicator 5. Practice and promote professional ethics 6. Conduct basic research and prepare reports 7. Analyze health system problems 8. Develop critical thinking and creativity 9. Create a cultural context in which public health professionals work 10. Involve community dynamics and networking 11. Prepare for health advocacy, teamwork and leadership, and professionalism
6	<p>Rationale for the Programme:</p> <p>Pakistan's Health Indicators alongwith the international commitments for achieving various targets including the SDGs (Sustainable Development Goals) targets are not showing the desired results. Pakistan is facing the burden of not only Communicable Diseases but also the Non-Communicable Diseases besides the rapidly growing population and environmental degradation and its consequences. The responses to these challenges are usually done by building more hospitals and more doctors without realizing the fact that many of these health-related problems are preventable and manageable at a very relatively lower cost by not very highly qualified doctors/specialists. The practice of Public Health has been internationally proven to be the most cost-effective intervention by any country for improving health status. However, the Public Health training, practice and its integration in health system of Pakistan has yet to evolve, nurture, grow and ultimately produce role models. Pakistan's spending on health is very low and having just network of hospitals and some community services along with unregulated and rapidly mushrooming private sector; the patients are being "treated" who manage to seek or encounter a service center or a health provider. Thus, with increasing poverty, changing lifestyles and many other social,</p>

	psychological, environments and demographic challenges, the 'occurrence' of diseases will keep on increasing. It is high time that we in BUMDC should initiate a comprehensive Programme which should be able to address all these challenges under one umbrella by producing the human resource which will then contribute in improving the health status of Pakistan.
7	<p>Brief Description of the Programme:</p> <p>The main purposes of the launching this innovative & pioneer program are to:</p> <ul style="list-style-type: none"> • Develop quality training and research opportunities in Public Health at various levels educational attainment. • Produce a key mass of Public Health specialists who can then be a productive professional in both Pakistan and globally. • Provide technical advisory services related to Public Health to government, non-government, agencies, international and donor groups and the private-for-profit sector. <p>The minimum criteria for getting admission in BSPH would be FSc/FA and equivalent with a minimum of 2nd division. However, Bahria University may consider raising the minimum division or cut-off marks. This will be a semester-based program having 2 semesters per year and will be spread over 4 years; it will be a morning program. There will be 44 major courses having 130 Credit Hours spread over 4 years. <i>Field Visits and Seminars by students will also be conducted as compulsory subjects but will be non-credited.</i> The selective subjects will also have regular tutorials following the interactive and problem-based learning, as needed. The details of the curriculum with credit hours are shared in Annex A and follows the recommendations made by HEC.</p>
8	Duration: 4 years
9	<p>Venue(s): On Site/Off Site/Both On & Off Site (Tick one; if Off Site, give details)</p> <p>Should be one site—but need to ensure the adequate infrastructure as well as faculty</p>
10	<p>Programme Scheduling Format:</p> <p>Morning/Evening/Weekend (tick one) Morning Semester/Annual/ (tick one) Semester</p>
11	Proposed Date of Commencement: Depends on availability of faculty and infrastructure
12	Mode of Study/Examination: BCQs, SEQs, OSPEs, including continuous evaluation and attendance
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>Please see enclosed as Annex I</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>Please see enclosed as Annex I</p>
15	<p>Additional Classroom(s) required: (<i>The requirement is to include the number of classrooms and their capacities.</i>) Please see enclosed as Annex I</p>
16	<p>Additional Requirement for Laboratories: (<i>The requirement is to include the number of laboratories, their equipment and their capacities.</i>) Please see enclosed as Annex I</p>

17	Additional Requirement for Books, Subscriptions, Memberships to Online Research Sites/ Repositories: Please see enclosed as Annex I
18	Minimum Qualification for Admission: FSCs/FAs or other equivalents
19	Admission Eligibility Criteria: (to be aligned with accreditation/regulatory bodies) At least good 2 nd division (as recommended by HEC)
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> NO
21	Number of Admissions Expected for First Intake: 50
22	Number of Admissions Planned/Expected for Subsequent Intakes: 50 each year (may be increased depending on capacity of infrastructure as well as having adequacy of Faculty)
23	Referred by: (delete which is inapplicable) FBOS: (Indicate the FBOS meeting reference and Item No) ???? BU-DHS – 27-(FBoSoHS)/ Held on 17 th September 2019
24	Complete Plan of Studies, inclusive of complete Roadmap: (Attach as Annex 'A') (see enclosed)
25	Course Outlines, Descriptions, Pre-Requisites & Readings (Compulsory & Recommended) (Attach as Annex 'C')

B. FINANCIAL DETAILS	
1	<p>Source of Funding:</p> <ul style="list-style-type: none"> • BU: Fully/Partially: FULLY • Public Sector (B1): Fully/Partially (provide complete details; attach MOU, agreement etc.) NIL • 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	<p>Degree Duration: 4 YEARS Annual or Semester System: ANNUAL</p> <p>Annual Number of Years FOUR Semester: Number of Semester EIGHT</p> <p>Total Number of Credit Hours: 130</p>
3	<p>Expected fee to be charged based on Cost & Benefits Analysis: (show working)</p> <p>Per annum fee: or Fee rate per credit hour:</p>
4	<p>Expected Number of students for 1st & 2nd Intakes: 50 EACH YEAR</p>
5	<p>Expected Earning from first two Intakes (B5): (Show working) 114,000,000</p>
6	<p>Expected Earnings for the Next Five Years (B6): (show working) 936,060,000</p>
7	<p>Total Estimated Salaries of all Additional Human Resources per annum (B7): (Show working) faculty and staff 108,440,000</p>
8	<p>Cost of Additional Laboratory Equipment/Tools (B8): (show working) 9,000,000</p>
9	<p>Cost of Additional Classrooms (B9): (Include furniture, technical aids etc) Faculty rooms and class rooms 28,600,000</p>
10	<p>Cost of Additional Books, Subscription & Memberships to on-line Sites/Repositories (B10): (show details) 20,000,000</p>
11	<p>Off-Site rental Expenses and Cost of other Fixtures (B11): (Show details)</p>
12	<p>Miscellaneous Expenses required for Starting the Program (B12): - Advertisement: 2,000,000</p>
	<ul style="list-style-type: none"> - Printing & Stationery - Admin Cost - Any other - Total
13	<p>Annual Recurring Expenditures in Subsequent Years (B13):</p> <ul style="list-style-type: none"> - Salaries: - Rentals: - Subscriptions/Memberships: - Advertisements: - Printing & Stationery: - Admin Cost - Any other - Total: 16,804,000

14	Total Cost of the Programme (B14): [Add B(7) to B(12)] 168,040,000
15	Net Cost of the Programme (B15): [Subtract B(1) from B(14)] - 168,040,000
16	Net Earnings in First Year (B16: [Subtract B(15) from B(5)] -282,040,000
17	Projected Annual Gross Earning in Subsequent Years (B 17): (<i>show details & working; add 10% towards all expenses in subsequent years.</i>) 89,706,000
18	Projected Annual Net Earning in Subsequent Years: [Subtract B(13) from B(17)] -72,902,000

Note: see Detailed description and cost working separately done as an Annex

Annex 1-to SOP- word file for description and explanation

Annex 2 to SOP- detailed working on Excel sheet

Course Outlines, Descriptions, Pre-Requisites & Readings (Compulsory & Recommended)**BACHELOR OF SCIENCE IN PUBLIC HEALTH (BSPH)****Admission Criteria:**

- FSc/FA and equivalent with minimum 2nd division

SCHEME OF STUDIES

S. No	Categories	Credit Hours	No. of Courses
1.	Compulsory Requirement (No Choice)		
1.1	<i>English 1</i>	3	
1.2	<i>English 2</i>	3	
1.3	<i>English 3</i>	3	
1.4	<i>English 4 (any other subject may be offered)</i>	3	
1.5	<i>Pakistan studies</i>	2	
1.6	<i>Ethics/Islamic Studies</i>	2	
1.7	<i>Mathematics 1</i>	3	
1.8	<i>Basic Statistics</i>	3	
1.9	<i>Introduction to Information and Communication Technologies</i>	3	
		Total=25	
2.	General Courses to be chosen from other departments		7
2.1	<i>Life Sciences Biology</i>	3	
2.2	<i>Sociology of Health and Disease</i>	3	
2.3	<i>Principles of Psychology</i>	3	
2.4	<i>Medical Anthropology</i>	3	
2.5	<i>Population Dynamics</i>	3	
2.6	<i>Primary Health Care</i>	3	
2.7	<i>Professional Ethics</i>	3	
		Total=21	

3.	Discipline-Specific Foundation Courses		10
3.1	<i>Personal Hygiene</i>	3	
3.2	<i>Concept of Health and Disease</i>	3	
3.3	<i>Basic Epidemiology</i>	3	
3.4	<i>Basic Biostatistics</i>	3	
3.5	<i>Health Promotion, Advocacy & Social Mobilization</i>	3	
3.6	<i>Community Nutrition</i>		
3.7	<i>Community Pediatrics</i>	3	
3.8	<i>Reproductive Health</i>	3	
3.9	<i>Environment& Occupational Health</i>	3	
3.10	<i>Mental Health</i>	3	
		Total=30	
4.	Major Courses including research project / Internship		14
4.1	<i>Fundamental of Infectious Disease</i>	3	
4.2	<i>Communicable Disease Epidemiology</i>	3	
4.3	<i>Non Communicable Disease Epidemiology</i>	3	
4.4	<i>Health Policy and Management</i>	3	
4.5	<i>Health Planning</i>	3	
4.6	<i>District Health Management</i>	3	
4.7	<i>Applied Epidemiology</i>	3	
4.8	<i>Research Methodology</i>	3	
4.9	<i>Microbiology</i>	3	
4.10	<i>Entomology</i>	3	
4.11	<i>Parasitology</i>		
4.12	<i>Field Visits</i>	3	
4.13	<i>Seminars by students</i>	0	
4.14	<i>Research Project</i>	0	
		39	

5.	Electives within the major		4
5.1	<i>Prison Health</i>		
5.2	<i>International Health</i>		
5.3	<i>Health Economics</i>		
5.4	<i>Health Financing</i>		
5.5	<i>Health Inventory Management</i>		
5.6	<i>Disaster Management</i>		
5.7	<i>Quality Management in Health Care</i>		
5.8	<i>School Health</i>		
5.9	<i>Health Information System</i>		
5.10	<i>Health Project Management</i>		
5.11	<i>Art and Public Health</i>		
5.12	<i>Community Dentistry</i>		
5.13	<i>Community Psychiatry</i>		
5.14	<i>Community Nursing</i>		
5.15	<i>Food Safety</i>		
5.16	<i>Health Marketing</i>		
5.17	<i>Addiction and Social Rehabilitation</i>		
5.18	<i>Nuclear Medicine</i>		
5.19	<i>Sports Medicine</i>		
5.20	<i>Adolescent and Sexual Health</i>		
5.21	<i>Risk Management</i>		
5.22	<i>Geriatrics</i>		
		12	
	Total	130	44

Semester Distribution

Semester	Categories	Credit Hours	No. of Courses
First	Compulsory Requirement (No Choice) <i>English 1</i> <i>Pakistan Studies</i> <i>Mathematics</i> <i>Life Sciences Biology</i> <i>Sociology of Health and Disease (list)</i> <i>Basic Computer Skills</i>	3 2 3 3 3 3	6
		17	
Second	<i>English 2</i> <i>Ethics/Islamic Studies</i> <i>Basic Statistics</i> <i>Principles of Psychology</i> <i>Medical Anthropology</i> <i>Personal Hygiene</i>	3 2 3 3 3 3	6
		17	

Third	<i>English 3</i> <i>Basic Computer Literacy</i> <i>Population Dynamics</i> <i>Primary Health Care</i> <i>Concept of Health and Disease</i>	3 3 3 3 3	5
		15	
Fourth	<i>English 4 (any other subject may be offered)</i> <i>Professional Ethics</i> <i>Basic Epidemiology</i> <i>Basic Biostatistics</i> <i>Health Promotion, Advocacy & Social Mobilization</i>	3 3 3 3 3	5
		15	
Fifth	<i>Community Nutrition</i> <i>Community Pediatrics</i> <i>Fundamental Principles of Infectious Disease</i> <i>Epidemiology of Infectious Diseases</i> <i>Non Communicable Disease Epidemiology</i>	3 3 3 3 3	5
		15	
Sixth	<i>Reproductive Health</i> <i>Environment& Occupational Health</i> <i>Health Policy and Management</i> <i>Health Planning</i> <i>District Health Management</i>	3 3 3 3 3	6
		15	
Seventh	<i>Mental Health</i> <i>Health Marketing</i> <i>Research Methodology</i> <i>Elective 1</i> <i>Elective 2</i> <i>Research Project</i>	3 3 3 3 3 3	6
		18	
Eight	<i>Microbiology</i> <i>Entomology</i> <i>Parasitology</i> <i>Elective 3</i> <i>Elective 4</i> <i>Research Project</i>	3 3 3 3 3 3	6
		18	

Note:

Field Visits and Seminars by students will be non-credit, but compulsory subjects spread over each Semester

DETAIL OF COURSES (Objectives and Contents of the courses)

1. Compulsory requirement (No Choice)

1.1	English I (Functional English)	Annexure A
1.2	English II (Communicational Skills)	Annexure B
1.3	English III (Technical Writing)	Annexure C
1.4	English I ^{III} (Any other subject can be offered)	
1.5	Pak-Studies	Annexure D
1.6	Islamic Studies	Annexure E
1.7	Mathematics I (Algebra)	Annexure F
1.8	Basic Statistics	Annexure G
1.9	Introduction to Information and Communication Technologies	Annexure H

2. General Courses

2.1 Life Sciences Biology

Learning Outcomes:

After studying this course, you should be able to:

1. Demonstrate a broad basic knowledge of the biological sciences.
2. Demonstrate a thorough understanding and competency in a specific discipline within the biological sciences.
3. Communicate scientific ideas effectively in both oral and written formats.
4. Think critically and evaluate, design, conduct and quantitatively assess innovative research in a biological discipline.
5. Have acquired the skills and knowledge needed for employment or advanced graduate or professional study in discipline related areas.

Course Contents:

1. Studying Life
2. Small molecules and chemistry of life
3. Routine carbohydrates & lipids
4. Nucleic Acids & origin of life
5. Cells: The working unit of life
6. Cell membranes
7. Cell Communication & Multicellularity
8. Energy Enzymes & metabolism
9. Pathway that harvest chemical energy
10. Photosynthesis
11. Cell Cycle & Cell division
12. Inheritance, Genes & Chromosomes
13. DNA and its role in inheritance
14. Gene mutation & Molecular Genetics
15. From DNA to protein: Gene Expression
16. Regulation of gene expression
17. Genosomes

18. Recombinant DNA technology
19. Gene expression & Development
20. Gene evolution
21. Mechanism of evolution
22. Evolution of gene & genomes
23. History of life and earth

Recommended Reading:

1. [Erwin Schrödinger](#) – What is Life? – Cambridge University Press
2. [Craig Heller, David Sadava, David Hillis, May Berenbaum](#) - Life: The Science of Biology
3. David Sadava - Life: The Science of Biology

2.2 Sociology of Health & Diseases

Learning Outcomes:

After studying this course, you should be able to:

- Discuss the social contexts of wellness and illness
- Explain the patient's perspective on the experience of illness including meaning making and interaction with care providers
- Examine the social-historical transformation of the medical system in the U.S., including the changing role of physicians and other health care providers
- Interpret visual and written depictions of indicators and trends in population health over time
- Identify the socio-cultural aspects of health and illness, particularly as relating to the definitions of health, illness behavior and social epidemiology
- Investigate the social causes of disease and illness related to disparities due to social stratification and unequal access
- Describe the historical role of women in the medical system as patients, practitioners and health care providers
- Differentiate the current ethical issues and debates about new medical technologies and their impact on doctor-patient relationships and on access to health care

Course Contents:

1. Evolution of Health & Healing,
2. Body, Mind, Illness and Environment
3. Theories, research and debates of medical sociology.
4. Social, environmental and occupational factors in health and illness;
5. The meaning of health and illness from the patient's perspective;
6. The historical transformation of the health professions and the health work force;
7. The social and cultural factors surrounding the creation and labeling of diseases;
8. Disparities in health, access to healthcare, and the quality of healthcare received;
9. Organizational and ethical issues in medicine including rising costs and medical technology; and health care reform.

Recommended Reading:

1. Bird, Chloe E., Peter Conrad, and Allen E. Fremont. 2000. "Medical Sociology at the Millennium." Pp. 1-10 in *Handbook of Medical Sociology, Fifth Edition*, edited by C.E. Bird, P. Conrad, and A. Fremont. Upper Saddle River, NJ: Prentice-Hall.
2. Link, Bruce, and Jo Phelan. 2010. "Social Conditions as Fundamental Causes of Health Inequalities." Pp. 3-17 in *Handbook of Medical Sociology, Sixth Edition*, edited by C. E. Bird, P. Conrad, A. M. Fremont and S. Timmermans. Nashville: Vanderbilt University Press

3. Shim, Janet. 2005. "Constructing 'Race' Across the Science-Lay Divide: Racial Formation in the Epidemiology and Experience of Cardiovascular Disease." *Social Studies of Science* 35: 405-436.
4. Prof. Saadat Farooq: Medical Sociology. Azeem Academy Karachi

2.3 Principles of Psychology

Description:

Surveys the basic concepts of psychology. Covers the scientific study of behavior, behavioral research methods and analysis, and theoretical interpretations. Includes topics that cover physiological mechanisms, sensation/perception, motivation, learning, personality, psychopathology, therapy, and social psychology.

Learning Outcomes:

After studying this course, you should be able to:

- Identify the major fields of study and theoretical perspectives within psychology and articulate their similarities and differences
- Differentiate between the major observational, correlational, and experimental designs used by psychologists; critically evaluate real world information sources.
- Identify the major parts of the nervous system including the brain and explain how they reciprocally influence emotion, behavior, and mental processes.
- Explain how people change physically, mentally, emotionally, and socially over the course of the life span using the major concepts of development
- Define consciousness and describe altered states of consciousness including sleep
- Differentiate between sensation and perception; articulate the major sensory pathways and how/where perceptual modifications can/does occur.
- Understand and describe major theories of motivation and be able to apply them to their own behavior
- Explain how organisms learn through classical conditioning, operant conditioning, and observational learning.
- Identify processes involved in the encoding, storage, and retrieval of information and how these processes impact the student's memory.
- Explain how people think using concepts, solving problems, and making judgments;
- Identify the major theoretical perspectives of personality and articulate their similarities and differences
- Differentiate between abnormal and normal behavior; identify the symptoms of major psychological disorders and explain what roles biological, psychological, and socio-cultural factors play in causing these disorders.

Course Contents:

1. The Scope of Psychology
2. The Functions of the Brain
3. On Some General Conditions of Brain-Activity.
4. Habit
5. The Automaton-Theory
6. The Mind-Stuff Theory
7. The Methods and Snares of Psychology
8. The Relations Of Minds To Other Things.
9. The Stream of Thought.

10. The Consciousness of Self.
11. Attention.
12. Conception.
13. Discrimination and Comparison.
14. Association.
15. The Perception of Time.
16. Memory.
17. Sensation.
18. Imagination.
19. The Perception of 'Things'
20. The Perception of Space.
21. The Perception of Reality.
22. "Reasoning."
23. The Production of Movement.
24. Instinct
25. The Emotions.
26. Will.
27. Hypnotism.

Recommended Reading:

1. Taylor - Health Psychology – 5th Edition – McGraw-Hill
2. Andrew Balim, Tracy A. Revenson – Handbook of Health Psychology
3. Jess Fiest, Linda Brannon – Introduction to Behavior and Health

2.4 Medical Anthropology

Learning Outcomes:

After studying this course, you should be able to:

- Discuss the ways in which ideas regarding health, illness, and treatment are socially constructed
- Analyze biomedicine as a cultural system and the nature of its spread around the globe
- Recognize the value of anthropology in understanding medicine and healing
- Break down complex academic journal articles into thesis, main points, and supporting evidence
- Conduct and present independent research on current popular health topics
- Successfully apply the arguments presented in academic articles to non-anthropological writing

Course Contents:

1. Introduction of Medical Anthropology
2. Culture and social aspects of the body, health, sickness and illness in the cross cultural prospective
3. Effects of culture on health
4. Medicinalization
5. Authoritative knowledge and belief
6. Global inequities
7. The phenomenology of disability, death and role of medical schools
8. Understanding interpretive approaches, critical theory and phenomenology

Recommended Reading:

1. Fadiman, Anne 1997 *The Spirit Catches You and You Fall Down: A Hmong Child, Her American Doctors, and the Collision of Two Cultures*. Farrar, Straus, and Giroux.
2. Lock, Margaret 2002 *Twice Dead: Organ Transplants and the Reinvention of Death*. Berkeley: University of California Press.
3. Montross, Christine 2007 *Body of Work: Meditations on Mortality from the Human Anatomy Lab*. Penguin Books.
4. Murphy, Robert 1990 *The Body Silent: The Different World of the Disabled*. New York: W.W. Norton.

2.5 Population Dynamics

Learning Outcomes:

After studying this course, you should be able to:

- Define the demographic transition and explain its historical relevance
- Describe the principle mechanisms that are associated with declining mortality, fertility and migration as well as the relationship between these three processes.
- Analyze basic empirical relationships between demographic and socioeconomic conditions.
- Outline both macro and micro level processes of development and their relationship to population change.
- Recognize and relate the role of both gender and technology in specific contexts to show their importance in demographic change

Course Content:

1. Understanding demography and population dynamics
2. Demographic cycle
3. International demographic/population trends
4. Population dynamic in Pakistan
5. Life expectancy
6. Introduction to family planning
7. Population dynamics verses national economy
8. Population transition

Recommended Reading:

1. Boserup, Ester. 1965. *The Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure*. Routledge.
2. Bongaarts, John, W. Parker Mauldin, and James F. Phillips. 1990. "The Demographic Impact of Family Planning Programs." *Studies in Family Planning* 21(6):299–310.
3. Das Gupta, Monica. 1987. "Selective Discrimination Against Female Children in Rural Punjab, India," *Population and Development Review* 13(1).
4. Dyson, Tim. 2001. "A Partial Theory of World Development: The Neglected Role of the Demographic Transition in the Shaping of Modern Society." *International Journal of Population Geography* 7(2):67–90.
5. Eastwood, Robert, and Michael Lipton. 2011. "Demographic Transition in sub-Saharan Africa: How Big Will the Economic Dividend Be?" *Population Studies* 65(1).
6. K. Park – Preventive and social medicine

2.6 Primary Health Care (PHC)

Learning Outcomes:

After studying this course, you should be able to:

- Define PHC and describe its core concepts
- Summarize the key factors that resulted in the development of PHC
- Explain the key principles and essential components of Comprehensive PHC
- Differentiate between Selective and Comprehensive PHC
- Enlist major achievements of PHC
- Describe organization of PHC services in Pakistan

Course Contents:

1. Introduction and Philosophy of PHC & HFA
2. Principles of PHC
3. Essential components of PHC
4. Barriers in implementation of PHC
5. Organization of PHC Services in Pakistan-1
6. Introduction to MDG's and SDG's
7. Introduction to National Health Programmes

Recommended Reading:

1. Principles of PHC. WHO
2. Strengthening PHC's in developing countries
3. PHC and MDG's. UNDP
4. Philosophy of PHC
5. WHR 2008

2.7 Professional Ethics

Learning Outcomes:

After studying this course, you should be able to:

- Ability to engage in informed critical reflection on the nature of professionalism and ethical challenges inherent in professionalism
- Knowledge of prominent normative ethics frameworks – consequentialist, deontological, virtue, and contractualism
- Awareness of types of ethical challenges and dilemmas confronting members of a range of professions (business, media, police, law, medicine, research)
- Ability to bring to bear ethical analysis and reasoning in the light of normative ethics frameworks on a selection of ethical challenges and dilemmas across the chosen range of professions
- Ability to relate ethical concepts and materials to ethical problems in specific professions and professionalism
- Ability to research appropriate material in relation to set questions in writing essays meeting the highest standards of rigor and clarity

Course Contents:

1. Understanding of the ethical problems and principles.
2. Understanding of the professionalism and ethics of other professions: how they interact and what can be expected from them as correct ethical behavior.
3. Benefit from a critical scrutiny of their own ethics by those from other professions.
4. The general principles of professional ethics.

5. Ethics of several major professions: Business Ethics, Media Ethics, Police Ethics, Medical Ethics, Legal Ethics, and Research Ethics.
6. The nature of a profession, professional codes of ethics, confidentiality, whistle-blowing.
7. The responsibility of business to the environment, uses and abuses of human research.
8. Animal ethics in research.

Recommended Reading:

1. Ethics for the Professions. John Rowan & Samuel Zinaich, Jnr. Wadsworth. 2003
2. Joan C. Callahan, Ethical issues in professional life, Oxford University Press, 1988.
3. Alan H. Goldman, The moral foundations of professional ethics, Rowman and Littlefield, 1980
4. Ruth F. Chadwick, (ed.) Ethics and the professions, Avebury, 1994.
5. Justin Oakley, Dean Cocking, Virtue ethics and professional roles. Cambridge University Press, 2001

3. Discipline Specific Foundation Courses

3.1 Personal Hygiene

Learning Outcomes:

After studying this course, you should be able to:

- Understand the importance of Personal Hygiene
- Identify the effects of eugenics on community
- Identify relationship of personal hygiene with disease
- Describe how personal hygiene improves health of individuals

Course Contents:

1. Introduction to Personal Hygiene
 - Handwash
 - Eye hygiene
 - Hair hygiene
 - Body hygiene
 - Oral hygiene
 - Nails and cuticles
 - Feet and shoes
 - Protection from noise and UV Light
 - Control of foul odour
2. Role of personal hygiene in communicable and Non communicable diseases
3. Types of cleanliness (intrinsic & extrinsic)
4. Prevention of cough cold and other contagious disease
5. Smoking and protecting rights of others
6. Personal hygiene at home
 - Clothes
 - Kitchen
 - Washroom
7. Personal hygiene at schools
8. Personal hygiene at surroundings
9. Personal hygiene at work place
10. Cleanliness and religion

Recommended Reading:

1. Healthy Living. Web Health Center
2. Sharon O Neil. Personal Hygiene Basic. Live Strong.com
3. Beth W Ornstein. A Guide to good personal hygiene. Everyday health.com
4. Virginia Smith. Clean: A History of Personal Hygiene and Purity. Oxford University Press

3.2 Concept of Health and Disease/Fundamentals of PH

Learning Outcomes:

After studying this course, you should be able to:

- Define and understand concept of health
- Identify determinants of health
- Enumerate the indicators of health
- Understand the concept of disease causation
- Understand iceberg of disease phenomenon
- Understand the levels of prevention
- Cover basic definitions and historical background of public health

Course Contents:

1. Concept of health
2. Dimensions of health
3. Definition of health
4. Health spectrum
5. Determinants of health
6. Responsibility of health
7. Indicators of health
8. Concept of disease
9. Concept of causation
10. Levels of prevention
11. Historical background of public health
12. Evolution of public health
13. Definitions of common public health terms
14. Health for all

Recommended Reading:

1. Basch PF. Textbook of international health, 2ndEd. New York, NY:OxfordUniversity Press.
2. Brownson RC, Baker BA, Leet TL, Gillespie KN. Evidence-based public health. New York, NY: OxfordUniversity Press; 2003.
3. Detels R, McEwen J, Beaglehole R, Tanaka H, (eds.). Oxford textbook of public health: the practice of public health, 4thed. Oxford: Oxford University Press; 2002.

3.3 Basic Epidemiology

Learning Outcome:

After studying this course, you should be able to:

- Understand the concept of Epidemiology, Epidemiological Studies and its application and uses in controlling Public Health problems
- Explain and practise some key techniques in epidemiology

- Understand some routine methods of data analysis
- Apply these techniques in a practical sense

Course Contents:

1. Introduction to Epidemiology
2. Measures of Disease Frequency: Prevalence and Incidence
3. Measures of Mortality
4. Descriptive Study Designs
5. Analytical Study Designs
6. Measures of Association
7. Criteria for Causation

Recommended Reading:

1. R. Beaglehole, R. Bonita, T.KjellstromBasic epidemiology AITBS India
2. Leon Gordis Epidemiology W.B. Saunders co.
3. Mausner JK , BAHN AK Epidemiology: An Introductory Text 3rd W.B. Saunders co.

3.4 Basic Biostatistics

Learning Outcomes:

After studying this course, you should be able to:

- Present & Interpret data in tabular and graphical forms
- Apply the basic rules of probability
- Summarize data using the appropriate measures of central tendency and variation
- Apply the principles of normal distribution on a population and on sample means
- Determine the required sample size for a given level of significance
- Determine & Interpret the confidence interval for sample means and proportions
- Apply the appropriate test of significance to test the hypothesis on a given data set

Course Contents:

1. Introduction to Biostatistics and its Application in Research
2. Data: its Types, Sources and uses
3. Organizing and Displaying Data
4. Measures of Central Tendency and Measures of Dispersion
5. Introduction to Statistical Software
6. Probability
7. Normal Distribution
8. Sampling Techniques
9. Confidence Intervals for Mean
10. Confidence Intervals for Proportion
11. Hypothesis Testing
12. Introduction to Tests of Significance
13. Correlation and Regression

Recommended Reading:

1. Pagano, Gauvreau Principles of Biostatistics 2nd Thomson
2. Rosner Fundamentals of Biostatistics 6th Thomson

3. Daniel WW Biostatistics: A Foundation for analysis in Health Sciences 5th (1990) Joh Wiley and Sons

3.5 Health Promotion, Advocacy and Social Mobilization

Learning Outcomes:

After studying this course, you should be able to:

- Describe the concept of health and its determinants
- Define Health Promotion and Develop an understanding about evolution of health promotion
- Explain the models of Health promotion
- Recognize the cultural diversities in Health Promotion
- Learn various strategies and methods for Health Promotion

Course Contents:

1. Concept and Determinants of Health
2. Health Literacy and Health Communication
3. Introduction of Health Education
4. Introduction to Health Promotion
5. Ottawa Charter, Jakarta Declaration, Healthy Cities 2000
6. Advocacy, Community Participation, Enablers and Healthy Public Policy
7. Approaches to Health Promotion
8. Cultural Diversity in Health Promotion
9. Intervention Programs
10. Social Mobilization

Recommended Reading:

1. Garry Egger, Ross Spark, Rob Donovan Health Promotion Strategies and Methods 2nd McGraw-Hill
2. Pakistan Medical Corps Health Education Handout Pakistan Medical Corps
3. Raingrubler B Health Promotion Theories Jones and Barlett Learning
4. Naidoo Foundations for Health Promotion Elsveir Health Sciences
5. National Institute of Health England: HPR 850 Theory at a glance: A guide for Health Promotion Practice National Institute of Health England: HPR 850

3.6 Community Nutrition

Learning Outcomes:

After studying this course, you should be able to:

- Identifying target populations that may be at nutritional risk
- Identifying and assisting in development of accurate nutrition education materials
- Demonstrate accurate understanding of the science of normal nutrition
- Communicate effectively, both orally and in writing
- Conduct needs assessments and develop nutrition interventions for individuals, groups and communities
- Use effective teaching strategies for individuals, groups, or through community education programming

- Apply understanding of the influence of socioeconomic, cultural, social, psychological, and ethnic food consumption issues and trends to nutrition practice
- Demonstrate professional attributes including time management, priority setting, work ethic, critical thinking, advocacy, and service to professional and community organizations
- Demonstrate active participation, teamwork and contributions in group settings

Course Contents:

1. Introduction to Human Nutrition and Balanced Diet
2. Identification of Population at Risk
3. Factors Contributing to Community Nutritional Disorders
4. Healthy Nutrition for Pregnant Women, Lactating Mothers and Children
5. Problems Related to Procurement, Storage, Supply and Distribution of Food to the Vulnerable Groups
6. Adequate Supply of Food (quality and quantity)
7. International Food Organizations (WFO etc)
8. Politics in Food Supply
9. Food Supply to Drought , Earthquake, War and Refugees
10. Management of Nutritional Disorder Diseases in Communities

Recommended Reading:

Author Books Hard/Online

1. Dr. Saira Afzal (HOD community med dept. KEMU) Concepts of community medicine Hard+Cheap+Easy
2. Dr. Saira Afzal (HOD community med dept. KEMU) Research Methodology and basic biostatistics Hard+Cheap+Easy
3. Naveed Alam Community Medicine Hard+Cheap+Easy
4. Park Preventive and social medicine Hard+Easy+Cheap
5. Muhammad Ilyas Public health and community medicine Hard+Easy+Cheap
6. US AID Nutrition Soft+Easy
7. Nouman Hashmi Community Medicine Hard+Easy+Cheap
8. Arlene Spark Nutrition in public health Soft+Downloadable (Google Books)
9. A Burgess, M Bijlsma, Community Nutrition Soft+Downloadable (Google Books)

3.7 Community Pediatrics

Learning Outcomes:

After studying this course, you should be able to:

- Establish public health perspective on child health
- Develop essential skills for neonatal care
- Monitor child growth and development
- Perform appropriate clinical and anthropometric assessments for the nutritional status of infants and children
- Assess, classify and describe appropriate treatment for sick children below the age of five years according to the principles of the Integrated Management of Childhood Illness
- Determine the nutritional requirements and the most common nutritional disorders affecting infants and children
- Familiarize with current child health programs

Course Contents:

1. Neonatal Care
2. Growth Monitoring
3. Promotion of Breastfeeding
4. Oral Rehydration
5. Immunization
6. Community Feeding
7. Nutritional Surveillance
8. Regular Health Check-ups

Recommended Reading:

1. Maternal and Child Health-Management Sciences for health. (www.msh.org)
2. Child Health: ebook. ecog-obesity.eu
3. Child growth standards and the identification of severe acute malnutrition in infants and children. A Joint Statement by the World Health Organization and the United Nations Children's Fund
4. K. Park – Prevention and social Medicine

3.8 Reproductive Health

Learning Outcomes:

After studying this course, you should be able to:

- Define Reproductive Health and Reproductive Lifecycle
- Identify the underlying determinants of reproductive health
- Describe the causes and prevention of underlying issues

Course Contents:

1. Introduction to Reproductive Health and Life Cycle Approach
2. ICPD
3. Reproductive Behavior
4. Safe Motherhood
5. Breastfeeding
6. Contraception
7. STI's
8. Reproductive Health Rights
9. Gender Power and Reproductive Health
10. Infertility

Recommended Reading:

1. Catriona Melville Sexual and reproductive health at a glance John Wiley & Sons limited
2. Paul .F.A VAN LOOK Sexual and reproductive health; A public health perspective. Academic Press (AP) in imprint of Elsevier
3. Kulczycki, Andrzej Critical issues in reproductive health DOI. [10.1007/978-94-007-6722-5_1](https://doi.org/10.1007/978-94-007-6722-5_1) Springer series+ Business media [Dordrechtwww.nap.edu](http://www.nap.edu)
4. Barbara Anderson Reproductive health women & men's shared responsibilities. Jones & Barlette
5. Jonathea B. Kotch Maternal and child health. Jones & Barlette

3.9 Environment and Occupational Health

Learning Outcome:

After studying this course, you should be able to:

- Describe effects of environment on health
- Enforcement Policy
- Demands of the Health and Safety Service
- Training, Administration and Management Control
- Environmental Protection Inspection Service
- Licensing and Regulatory rule

Course Contents:

1. Air Pollution, its Hazards and Prevention
2. Noise Pollution, its Hazards and Prevention
3. Water Pollution, its Hazards and Prevention
4. Water Purification
5. Radiation, its Hazards and Prevention
6. Waste Management
7. Ozone Layer Depletion
8. Climate Change and Global Warming
9. Introduction to Occupational Health
10. Evolution of Occupational Health (Labor Movements)
11. Occupational Health Hazards and its Prevention
12. Work Place Safety
13. Prevention of hospital based health hazards in hospital workers
14. Social Security
15. Prevention of Gender Harassment

Recommended Reading:

1. Moore GS. Living with the earth: Concepts in environmental health science, 2nd Edition. Boca Raton, FL: Lewis Publishers;2002.
2. Sellers CC. Hazards of the job: from industrial disease to environmental health science. Chappel hill: University of North Carolina Press;1997
3. Vesilind PA, Pierce JJ. Environmental Pollution and Control, 4th Education Boston MA: Butter worths Publishers, 1983.

3.10 Mental Health

Learning Outcomes:

After studying this course, you should be able to:

- Define Mental Health and cover the basic concepts of Community Mental Health
- Enumerate common mental health problems in Pakistan
- Learn to apply levels of prevention to mental health problems
- Understand the biological, psychosocial and socioeconomic factors affecting mental health
- Describe the main reasons of substance abuse

Course Contents:

1. Introduction to Mental Health
2. Prevention of Mental ill Health and Promote Mental Health

3. Risk and Protective Factors for Mental Disorders
4. Socioeconomic Determinants of Mental Health
5. Mental Health and Quality of Life
6. Strengthening Community Network
7. Reducing Harm from Addictive Substances
8. Prevention of Child Abuse and Neglect
9. Coping with Parental Mental illness
10. Management of Mental Health in Rehabilitation Centers

Recommended Reading:

1. Compton MT. Social Determinants of Mental Health. 2015 American Psychiatric Association
2. Larol S. Handbook of Sociology of Mental Health. 2nded. Springer 2012
3. R Streevani A guide to Mental Health & Psychiatric Nursing 2nd Jaypee
4. The ICD-10 Classification of Mental and Behavior Disorders, AITBS/WHO.

**4. Major Courses Including Research
Project/Internship**

4.1 Fundamental of Infectious Diseases

Learning Outcomes:

After studying this course, you should be able to:

- Understand natural history of disease,
- List the common infectious diseases of public health importance
- Describe the global and national impact of common communicable diseases
- Discuss the strategies of control of common communicable diseases in Pakistan

Course Content:

1. Infection, Contamination, Pollution, Infestation, Infectious Disease, Communicable Disease, Contagious Disease
2. Host, Immune and Susceptible Person
3. Sporadic, Endemic, Epidemic, Pandemic, Epizootic, Exotic and Zoonotic
4. Contact, Fomites, Carriers, Vectors and Reservoir of Infection
5. Incubation, Infective, Prodromal Period and Generation Time
6. Cross Infection, Nosocomial, Opportunistic Infection and Iatrogenic Disorders
7. Surveillance, Eradication and Elimination
8. Reservoir and Source of Infections
9. Escape of Organism, Mode of Transmission, Entry Into the Body, Susceptible Host and Host Defenses (Immunity)
10. Controlling the Reservoir, Early Diagnosis and Treatment, Isolation, Quarantine, Disinfection Interruption of Transmission

Recommended Readings:

1. Mendel, Douglas, Bennets. Principles and Practices of Infectious Diseases.
2. Nelson KE. Epidemiology of Infectious diseases. General Principles. Jones and Barlet Publishers England

4.2 Communicable Disease Epidemiology

Learning Outcomes:

After studying this course, you should be able to:

- Understand Natural History of disease
- List common infectious disease of public health importance
- Describe the global and national impact of common communicable diseases
- Discuss the strategies of control of common Communicable Diseases in Pakistan

Course Content:

1. Disease Spread Through Respiratory Tract
2. GIT Infections
3. Vector-Borne Diseases
4. Zoonotic Diseases
5. Contagious Diseases
6. Surface Infections
7. Sexually Transmitted Infections
8. Emerging and Re-emerging Diseases

Recommended Reading:

1. Chanawongse K. Understanding primary health care management: from theory to practical reality. Bangkok: Buraphasilp Press; 1990.
2. Dicker RC, et. al. Principles of epidemiology: an introduction to applied epidemiology and biostatistics, 2nded. Atlanta, GA, USA: Centers for Disease Control and Prevention, 1992.
Self-study course 3030-G. Available
[from:URL:http://www.phppo.cdc.gov/PHTN//catalog/pdf-file/Epi_Course.pdf](http://www.phppo.cdc.gov/PHTN//catalog/pdf-file/Epi_Course.pdf)

4.3 Non Communicable Disease Epidemiology

Learning Outcomes:

After studying this course, you should be able to:

- Understand the importance of NCDs in Pakistan
- The awareness of the preventive strategies for NCDs
- Develop the health promotion strategies for NCDs
- Define and prevent injury, accidents and their types

Course Content:

1. Hypertension
2. Coronary Heart Diseases
3. Stroke
4. Cancers
5. Blindness
6. Diabetes Mellitus
7. Obesity
8. Injuries and Accidents

Recommended Reading:

1. Ministry of Health, Government of Pakistan, World Health Organization, Heartfile. National action plan for prevention and control of non-communicable diseases and health promotion

- in Pakistan: a public-private partnership in health. Islamabad, Pakistan: tripartite collaboration of the Ministry of Health, Government of Pakistan; WHO, Pakistan office, and Heartfile; 2004. Available from: URL: <http://www.heartfile.org/pdf/NAPmain.pdf>
2. Ilene Moroflubkin, with Pamala D. Larsen Chronic Illness 4th Jones & Bortlett Publishers

4.4 Health Policy and Management

Learning Outcomes:

After studying this course, you should be able to:

- Demonstrate understanding of human, social and economic dynamics of organizational behavior
- Develop competency in making effective managerial decisions under conditions of uncertainty
- Demonstrate capacity to apply conceptual framework for understanding political and policy process in healthcare
- Understand basic organization, financing and delivery of health service and public health systems

Course Content:

1. Introduction to Health Management
2. Strategic Management
3. Planning
4. Organization
5. Monitoring
6. Evaluation
7. Pakistan Health Policy 2009
8. Health Financing
9. Stewardship
10. History of Health Policy in Pakistan
11. Determinants of health policy

Recommended Reading:

1. Chanawongse K. Understanding primary health care management: from theory to practical reality. Bangkok: Buraphasilp Press; 1990.
2. Gourlay R. Training manual on health manpower management (8 volumes). Geneva: Division of Health Manpower Development, World Health Organization; 1988. Document no. WHO/EDUC/88.195.
3. McMahon R, Barton E, Ross F. On being in charge: a guide to management in primary health care, 2nded. Geneva: World Health Organization; 1992.
4. Reinke WA. Health planning for effective management (HPEM). New York, NY: Oxford University Press; 1988.
5. Shortell SM, Kaluzny AD. Health care management, 3rded. Albany, NY: Thompson Delmar Learning; 2000.
6. World Health Organization. The world health report 2000: Health systems – improving performance. Geneva: World Health Organization; 2000. Available from: URL: http://www.who.int/entity/whr/2000/en/whr00_en.pdf

4.5 Health Planning

Learning Outcomes:

After studying this course, you should be able to:

- Familiarize the students with the basic concept of planning, planning models, techniques and tools
- Understand the functions of planning machinery of Pakistan
- To understand the important terminology related to health planning for its implementation wherever required

Course Content:

1. Importance and Significance of Planning
2. Understanding the Planning Concepts
3. Planning Models
4. Types of Plans
5. Planning Process
6. Planning Tools
7. Planning Commission of Pakistan
8. Role of ECNEC in Planning
9. Planning for Planning

Reference Reading:

1. Green A. An introduction to health planning in developing countries, 2nd edition. Oxford: Oxford University Press; 1999.
2. Kielmann, AA, Janovsky K, Annett H. Assessing district health needs, services and systems: protocols for rapid data collection and analysis. London, UK: Macmillan Education Ltd and AMREF, 1995.
3. Green A. An Introduction to Health Planning in developing countries. ELBS London

4.6 District Health Management

Learning Outcomes:

After studying this course, you should be able to:

- Describe the district health care delivery system
- Inform the people about various health care services offered at different tiers of health care delivery system chain.

Course Content:

1. Introduction to Healthcare Care Delivery System in Pakistan {Public and Private Sector}
2. Organization of Health Care System in a District
3. Healthcare Services Delivered at Different Tiers of District Health Management Services.{Minimum Service Delivery Standards}
4. Health Information System at District Level.
5. Organization and Functioning of Dispensary, MCHC, BHU, RHC, THQ, DHQ,
6. Referral Chain of Patient from BHU to DHQ and onwards
7. Duties of Different Health Care Providers Employed in District Health Management.
8. Role of District administration in district health management

9. Nazim and its part in district health management

Recommended Reading:

1. Kielmann AA, Siddiqi S, Mwadime RK. District health planning manual: toolkit for district health managers. Islamabad, Pakistan: Multi-donor Support Unit, Ministry of Health; 2002.
2. Manual of Epidemiology for District Health Management. J. P. Vaughan, R. H. Morrow World Health Organization, 01-Jan-1989Medical198 page
3. Nabeela Ali. District Health Management Team. *PAIMAN. Contech International Health Consultants*

4.7 Applied of Epidemiology

Learning Outcomes:

After studying this course, you should be able to:

- Apply measures of disease frequency in Public Health using descriptive and cross-sectional surveys
- Describe further statistical procedures in Cohort and case-control studies
- Interpret the results of a study investigating the effects of Confounding, Bias and Chance.
- Describe the methods adopted to control for Confounding, Bias, and Chance in a study.
- Describe and interpret the results of an experimental study design investigating the possible sources of bias and its control in study designs and statistical analysis.
- Apply screening in disease control.
- Use the tests of significance for parametric data: three or more independent groups of observations (ANOVA)
- Use the tests of significance for categorical data:
- Use non-parametric tests for a single or more than one samples e.g. Wilcoxon's Rank sum tests, Mann-Whitney U-tests etc.
- Investigate the relationship and association of two or more continuous variables using regression, correlation and interpretation and presentation of correlation.
- Evaluation of interventions using appropriate epidemiological and statistical methods.

Course Contents:

1. Disease Frequency: Incidence and Prevalence
2. Proportional Morbidity and Mortality
3. Details of Measures of Association and Inference in Cohort and Case Control Studies
4. Application and Interpretation Issues in Screening Applied to Disease Control
5. Experimental Study Designs: Application and Interpretation of the Results
6. Application and Interpretation of Parametric Test: ANOVA in Experimental and other Study Designs.
7. Application and Interpretation of Non Parametric Tests: Chi Square Test for Several Proportions, $n \times k$ Tables and Tables with Ordered Data, Fisher's Exact Test, Non-parametric Tests for a Single or More than one samples e.g. Wilcoxon's Rank Sum Tests, Mann-Whitney U-tests.
8. Application and Interpretation of Regression, Correlation Coefficients, Coefficient of Determination in study Results.

Recommended Reading:

1. R. Beaglehole, R. Bonita, T.KjellstromBasic epidemiology AITBS India
2. Leon Gordis Epidemiology W.B. Saunders co.

3. Mausner JK , BAHN AK Epidemiology: An Introductory Text^{3rd} W.B. Saunders Co.
4. Pagano, Gauvreau Principles of Biostatistics 2nd Thomson
5. Rosner Fundamentals of Biostatistics 6th Thomson
6. Daniel WW Biostatistics: A Foundation for analysis in Health Sciences 5th
(1990) John Wiley and Sons.

4.8 Research Methodology

Learning Outcomes:

After studying this course, you should be able to:

- Importance of Qualitative and Quantitative Research
- Develop research protocol
- Critical appraisal of research paper
- Writing research paper

Course Content:

1. Introduction to Research Methodology
2. Types of Research
3. Selection of Research Topic
4. Formulation of Objectives
5. Literature Search
6. Writing Introduction
7. Plagiarism
8. Writing Methodology
9. Data Collection/Questionnaire Design
10. Analysis and Interpretation
11. Report Writing
12. Timeline (Gantt Chart)
13. Budget Plan
14. Research Ethics

Recommended Reading:

1. Varkivisser CM. WHO. Designing and Conducting Health System Research Projects. International Development Research Center
2. Abramson JH, Abramson ZH. Survey Methods in Community Medicine. 5th Edition. Churchill Livingstone
3. Taylor, Sinha, Ghoshal Research Methodology PHI
4. Martin Brett Davies Doing a successful Research Project Palgrave
5. S.R. Singh Research Methodology APH

4.9 Microbiology

Learning Outcomes:

After studying this course, you should be able to:

- Familiarize students with fundamental concept of Microbiology

Course Content:

1. Fundamentals of Microbiology
2. Introduction to Medical Microbiology

3. Gen. Immunology
4. Microbial Taxonomy
5. Gen. Virology
6. Mycology

Recommended Reading:

1. Black, J. G. 2005. Microbiology: Principles & Explorations, 6th edition, John Wiley and Sons, N.Y. 2.
2. Talaro, K. P. 2008. Foundations in Microbiology: Basic Principles, McGraw-Hill Companies, N.Y. 3.
3. Tortora, G. J., Funke , B. R. and Case, C. L. 2008. Microbiology: an introduction 9th edition, Pearson Education.
4. Tortora, G. J., Funke, B. R. and Case, C. L. 2012. Study Guide for Microbiology: An Introduction. 11th edition. Benjamin-Cummings Publishing Company, U.S.A.

4.10 Entomology

Learning Outcomes:

After studying this course, you should be able to:

- Appreciate the value and importance of insects
- Understand the need for good management practices
- Learn about the classification, biology, ecology, behavior, and control of insects
- Identify major orders and families of insects
- Acquire skills for collecting, mounting, and preserving insects for scientific study

Course Contents:

1. Classification of Arthropod Vectors, General Characteristics of Arthropods, Mites & Ticks
2. Insects
3. Lice Bugs & Fleas
4. Flies
5. Mosquitoes
6. Common Arthropod Borne Diseases
7. Arthropods of Medical Importance (Mosquito, Flies, Fleas, Ticks, Mites and Human Lice)
8. Principles of Arthropods Control (Environmental, Chemical, Biological and Genetics)
9. Insecticides and Their Public Health Importance

Recommended Reading:

1. Awastheir, V.B. 2009. Introduction to General and Applied Entomology. Scientific Publisher, Jodhpur, India.
2. Dhaliwal, G.S. 2007. An Outline of Entomology. Kalyani Publishers, Ludhiana.
3. Elzinga, R.J. 2003. Fundamentals of Entomology. Prentice Hall.
4. Gullan, P. J. and P. S. Cranston. 2010. The Insects: An Outline of Entomology. 4th ed., Wiley-Blackwell. A John Wiley & Sons, Ltd., Publication, UK.
5. Lohar, M.K. 2001. Introductory Entomology. Department of Entomology, Sindh Agriculture University, Tandojam Sindh, Pakistan.

4.11 Parasitology

Learning Outcomes:

After studying this course, you should be able to:

- Describe in details the life cycle of medically important parasites.
- Define the organs commonly involved in the infection.
- Recall the relationship of this infection to symptoms, relapse and the accompanying pathology.
- Arrange the factors that determine endemicity of the parasite infection
- State the distribution and epidemiology of the parasites
- Explain the methods of parasite control, e.g. chemotherapy, molluscicides, general sanitation plus describing the advantages and disadvantages of each method.
- Demonstrate a broad understanding of the central facts and the experimental basis of modern Parasitology.
- Solve problems in the context of this understanding.
- Demonstrate practical skills in fundamental parasitological techniques.
- Present and interpret results obtained from using these techniques.
- Present information clearly in both written and oral form.

Course Content:

1. Identification of parasites
2. Life cycles.
3. Epidemiological factors.
4. Host-parasite relationships.
5. Immunity to parasites.

A. Protozoa

- Plasmodium and Malaria
- Entameoba Histolytica and Dysentery
- Giardia Lamblia and Giardiasis
- Trichomonas and Trichomoniasis
- Leishmania and Leishmaniasis

B. Helminths

- Taeniasaginata, Ancylostomaduodenale, Ascaris, enterobiusvermicularis and worm infestation

C. Ectoparasites

- Pediculushumanus and Head lice
- Sarcoptesscabei and scabies

6. Recent molecular techniques.

7. The appropriate preventive and control measures.

Recommended Reading:

1. Roberts LS, Janovy Jr J. 2009. Foundations of Parasitology, 8thed., McGraw-Hill, New York. 701 pp. ISBN 978-0-07-302827-9.

2. General parasitology-Thomas C Cheng
3. Medical parasitology-Markell and Voges
4. Foundation of parasitology-Roberts, Janovy
5. Human parasitology-Burton J Bogtish.

4.12 Health Professions Education

Learning Outcomes:

After studying this course, you should be able to:

1. Understand and apply educational research in health professions education.
2. Design evidence-based educational programs and materials with appropriate scope, sequence, and focus for learners.
3. Deliver effective, theory-based instruction in large group and small group.
4. Effectively use assessment tools to reflect student progress and to promote student learning.
5. Evaluate the effectiveness of programs, curricula and instructional events.
6. Provide reflective and evidence-based leadership.

Course Contents:

1. Theories of learning and skill development
2. Student-centered learning, active learning, deep learning, collaborative learning
3. Conditions of learning: characteristics of powerful learning environments
4. Using reflective practice to promote learning
5. Educational principles and theories related to clinical teaching and learning
6. Identify different approaches to curriculum development and their underlying philosophies
7. Identify local, national and international drivers which shape curricula in medical education
8. Design and critique programmes (courses) and modules (components of courses) in medical education
9. Design and critique evaluation strategies and models for programs and modules
10. Develop assessment strategies
11. Design assessment tasks appropriate to a range of learning outcomes
12. Research approaches, methods and techniques in health professions education

Recommended Books:

1. A Practical Guide for Medical Teachers. Dent JA & Harden, RM (3rd Ed). Churchill Living Stone, Elsevier, 2009
2. ABC of Learning and Teaching in Medicine 2nd Ed. Cantillon & Wood, 2010
3. Assessment in Medical Education: Trends and Tools. Sood R, Paul VK, Mittal S, Adkoli BV, Sahni, P, Kharbanda OP, Verma, K., Nayar U.(eds). New Delhi: KL Wig CMET, AIIMS, 1995.
4. Basic Methods of Medical Research. Indrayan A (1st Ed), 2006.
5. Communication Skills in Clinical Practice. Sethuraman KR (1st Ed) Jaypee Brothers, 2001.
6. Educational Handbook for Health Personnel. Guilbert JJ (6th Ed). WHO, 1987

4.13 Field Visits

4.14 Seminars by students

4.15 Research Project

5. ELECTIVES WITHIN THE MAJOR

5.1 Prisons Health

Learning Outcomes:

After studying this course, you should be able to:

- Understand the health and social problems of Prisoners
- Provide Counseling services for prevention and rehabilitation of prisoners leading to skillful productive citizens
- Understand the most common criminal events and communicable diseases in prison

Course Content:

1. Introduction to Prison Health
2. Standards in Prison Health
3. Protecting and Promoting Health in Prison
4. Primary Health Care in Prisons
5. Prison Specific Ethical and Clinical Problems
6. Prevention of Common Infectious Diseases in Prisoners
7. Special Health Requirements for Female Prisoners
8. Prevention of Violence and Trauma Among Prisoners
9. Vocational Training Opportunities
10. Treatment of Mental Ill Health Among Prisoners

Recommended Reading:

1. Micheal Puisis Clinical method in correctional Medicine Elsevier incorporation
2. Keith Soothill Prison & Health WHO Hand book of Forensic Mental Health

5.2 International Health

Learning Outcomes:

After studying this course, you should be able to:

- Familiarize the students regarding the international rules and regulations for travelers about the common internationally communicable diseases
- To know the restrictions imposable on travelers
- Describe the importance of culture, class, and gender on perceptions of health and illness, on health status, and on access to services
- Describe the health situation of a country using the concepts of demographic and epidemiological transition
- Delineate the difference between population-based and clinical approaches to health improvement and why population-based approaches are more effective in resource poor settings
- Explain how international health status is measured and communicated
- Discuss the ethical issues implicit in conducting research in the developing world
- Identify the key players in international public health

- Basic principles of international health, in order to give them a better understanding of the wider context of health systems and public health across various countries

Course Content:

1. Introduction to the Concept of International Health
2. International Health Organizations
3. Strengthening Health Security by implementing the international health regulations
4. Global System for Alert and Response
5. IHin Context of Multi-Hazard Dimension
6. Country Capacity Building for International Health
7. International Travel, Health & Mass Gatherings
8. Public Health at Ports, Airports, Entry and Exit Points on Borders
9. IHR Procedure and Implementations

Recommended Readings:

1. Necil Nathansona Global Public Health
2. Anne Emanuelle Bim Textbook of International Health, Global health in dynamic world, 3rd Edition
3. Michael, Robert, Anne International Public Health

5.3 Health Economics

Learning Outcomes:

After studying this course, you should be able to:

- Interpret and appropriately apply the key concepts of economics within the context of the health system
- Debate the relative merits of equity considerations in setting priorities for a health system
- Understand approaches to identify and value costs and outcomes to include in economic evaluation
- Describe major types of economic evaluation and to understand their use in the decision-making process
- Recognize and apply key steps in critically reviewing economic evaluations
- Understand and describe the main features of the Australian health system- in particular how it differs from other salient national health systems according to how services are delivered and purchased
- Write concise reports on health economic issues demonstrating sound knowledge and skills to apply analytic thinking for a scientific debate and/or problem solving

Course Content:

1. Importance of Economics in Health System
2. Growth of Health Economics
3. Economic Principles
4. Wealth and Health
5. Health Needs Analysis
6. Health Sector Demands
7. Health Supplies
8. Cost Analysis

9. Cost Benefit Analysis
10. Cost Minimization Analysis
11. Cost Effectiveness Analysis
12. Cost Utility Analysis
13. Break Even Analysis
14. Uncertainty
15. Marginal Analysis
16. Economy of Health System of Pakistan

Recommended Readings:

1. Pearson The Economics of Health & Health Care, Folland, Goodman, Stano, 5th edition
2. David Kernick, Radcliffe Getting Health Economics into Practice, Medical Press
3. Kumaranayake, Normand Health Economics, MCPAKE, Routledge London & N.Y.

5.4 Health Financing

Learning Outcomes:

After studying this course, you should be able to:

- Orient students about the mechanism of financial resources and its disbursement
- Generate house based resources on health spending
- To enable the students to prepare quarterly and annual demands and financial reports

Course Content:

1. Overview of Health Financing
2. Sources of Health Financing
3. Sources and Mechanism of Health Financing in Pakistan
4. Quarterly and annually financial plans, inventories and auditing
5. Comparison of Health Finances in Global Perspective
6. Relationship Between Financing Instruments and Goals
7. Framework of Healthcare in Pakistan
8. Domestic Spending and Donor Assistance Comparisons
9. Effect of Devolution on Health Financing
10. Financing District Health Services
11. Role of Private Sector, Traditional Medicine and Ngo's
12. Models of health care services
13. Patients satisfaction

Recommended Readings:

1. Diane McIntyre Health Care Financing in Low & Middle-income countries
2. ECNEC & Budgeting Documents of Government of Pakistan
3. An introduction to Financial Management
4. A practitioner guide Health Financing World Bank.

5.5 Health Inventory Management

Learning Outcomes:

After studying this course, you should be able to:

- Optimize Inventory Levels

- Build an Inventory Management Plan
- Design & Manage Warehouse Operations
- Management of “in” & “out” record
- Increase Accuracy, Traceability & Reduce Parts Variety
- Reserved stock and reserved stock limit

Course Contents:

1. Introduction to Inventory Management
2. The Financial Implications of Holding Inventory: Inventory Carrying Cost, Effect on Financial
3. The Cost of not holding enough Inventory
4. Introduction to Effective Inventory Management
5. Inventory Management & the Supply Chain Strategy
6. Demand Forecasting
7. Lead time Management
8. Introduction to Inventory Planning
9. Inventory Categorization Techniques: ABC Analysis, Fast & Slow Moving, Excess, Obsolete & Defective Stocks
10. Traceability and Variety Reduction
11. Inventory Coding Systems and bin card management
12. The Inventory Management Plan
13. Introduction to Inventory Operations
14. Monitoring Movements: Inventory Accuracy
15. Measuring and Valuation of Inventory
16. Receipt & Issuance of Inventory
17. Systems to Replenish Inventory
18. Order planning (time, value & quantity)
19. Storage of vaccines and perishable items
20. Inventory management of disposables

Recommended Books:

1. Essentials of Inventory Management, by Max Muller (Basic Inventory Control)
2. Warehouse Management: A Complete Guide to Improving Efficiency and Minimizing Costs in the Modern Warehouse, by Gwynne Richards (Warehouse and Material Handling)
3. Supply Chain Network Design: Applying Optimization and Analytics to the Global Supply Chain, by Michael Watson et al (Distribution Management)
4. Inventory Accuracy: People, Processes, & Technology, by David J. Piasecki (Inventory Accuracy)
5. Inventory Strategy: Maximizing Financial, Service and Operations Performance with Inventory Strategy, by Edward Frazelle (Inventory Strategy)
6. Introduction to Materials Management, by Steve Chapman et al (Material Management)

5.6 Disaster Management

Learning Outcomes:

After studying this course, you should be able to:

- Basic Disaster Concepts
- Planning for disaster management
- Post disaster rehabilitation

- Disaster's effects on economy and health
- Students will recognize basic principles of public health as they relate to disaster management.
- Students will be able to apply critical thinking and decision making skills for given disaster scenarios.
- Students will identify and use appropriate concepts, theories, and principles towards the development of disaster preparedness and mitigation plans.

Course Content:

1. Concept of Disaster
2. Types of Disaster
3. Effect of Disaster on Health
4. Elements at Risk in Disaster
5. Disaster Management Cycle
6. Role of Public Health in Disaster
7. Role of NDMA in Managing Disaster
8. Health Education for Disaster Safety
9. Public Health Review
10. Interdisciplinary Disaster Planning
11. Community Level Preparedness
12. Disaster Mitigation and Post-Event Response
13. Risk Communications
14. Environmental Health Degradation
15. Mental Health Challenges of a Disaster
16. Monitoring and Evaluation of Recovery Efforts

Recommended Readings:

1. B. Narayan Disaster Management APH
2. Dr. S.R. Singh Disaster Management APH

5.7 Quality Management in Health care

Learning Outcomes:

After studying this course, you should be able to:

- Improve the quality of medical and behavioral healthcare
- Maintain a process for adopting and updating both preventive health guidelines
- Identify, develop and enhance activities that promote member safety and reduction in medical errors
- Ensure that quality of care and service delivered by delegates meet standards
- Document and report the results of monitoring activities

Course Content:

1. Introduction to Quality Management in Health
2. Evolution of Quality and its Standards
3. Quality Healthcare
4. Characteristics of Quality
5. Dimensions of Quality

6. Quality Principles
7. Quality Cycle & Circle
8. Quality Audit of Healthcare Services

Recommended Readings:

1. Willson Quality gurus in Health
2. Heizer & Nathan Total Quality Management, Manufacturing and Services
3. Ellen J. Gaucher & Richard J. Coffey Total Quality in Health Care
4. EFQM training/workshop workbook Quality Management in International Health Heidelberg University Germany

5.8 School Health

Learning Outcomes:

After studying this course, you should be able to:

- Describe the components of school health
- Review history of school health
- Develop school health program
- Establish role of personnel
- Delineate Roles and Responsibilities for the Safe Delivery of Specialized Health Care

Course Contents:

1. Objective of school health services
2. School health team
3. Duties of School medical officer
4. Duties of School health nurse
5. Medical inspection of school children
6. Common school health problems
7. Infactuis diseases in schools
8. Healthy school environment
9. Role of teacher in school
10. School health services on Pakistan
11. Models of school health services
12. The Health Needs of School-Age Children
13. School health education program, Planning and implementation

Recommended Readings:

1. UNESCO Pakistan School Health Program
2. NCHD School Health Program
3. Jerry Newton, Richard Adams The New School Health Handbook: A Ready Reference for School Nurses and Educators, 3rd Edition
4. Social Action Programme, Pakistan 1990
5. National Health Survey, Pakistan 1989
6. WHO (1990) Towards a better future, MCH, Geneva

5.9 Health Information System

Learning Outcomes:

After studying this course, you should be able to:

- To familiarize the students with the basic concepts of health MIS
- To expose the students to the health information data collection, analysis and interpretation techniques
- To provide the stakeholders basic vital/health information for decision making

Course Contents:

1. Introduction to Health MIS
2. Contribution of Information technology
 - The strategy network in Health Care organizations
 - Information strategy related to Enterprise and organizational strategies
3. Organizational Accountability
 - Integration of clinical strategy with business strategy
 - Information strategy ; Clinical Decision support system
 - Aligning information strategy with clinical strategy
4. Information Strategy empowers organizational strategy, Managing data, Information and Knowledge
5. Information strategy ; Managing information resources
6. Investing in Information technology
7. Managing Information technology services
8. Information Security and ethics
9. Building Health care Information infrastructure

Recommended Readings:

1. Gordon. D Brown, Tamara T. Stone, Timothy B Patrick - Strategic management of Information systems in Health care (BK-1)
2. www.who.hmis

5.10 Health Project Management

Learning Outcomes:

After studying this course, you should be able to:

- Understand project management concepts / techniques and how they improve the success of information technology projects.
- Demonstrate knowledge of project management terms and techniques, such as:
 - The project management knowledge areas and process groups
 - The triple constraint of project management applied to a healthcare environment
 - The project life cycle
 - Tools and techniques of project management, such as:
 - Project selection methods
 - Work breakdown structures
 - Cost estimates
 - Earned value management
 - Motivation theory and team building
- Be familiar with Project Management tools / techniques and be able to help plan and manage a project.

Course Content:

1. Introduction to Project Formulation
2. Preparing for project formulation

3. Analyzing the organizational situation
4. Analyzing the Health, Socioeconomic and Demographic situation
5. Analyzing and projecting the problems
6. Setting the objectives and targets
7. Identifying potential obstacles
8. Designing the strategies
9. Planning the project
10. Writing the project proposal
11. Initiating the project implementation
12. Specifying and scheduling the work
13. Clarifying authorities, responsibilities, and relationships
14. Obtaining resources
15. Directing and controlling
16. Terminating the project

Recommended Reading:

1. WHO Health Project Management a manual of procedures for formulating and implementing health projects by J. Bainbridge
2. Martin Van Der Schouw Practical Project Management
3. David Shirlay Project Management for Health Care

5.11 Art and Public Health

Learning Outcomes:

After studying this course, you should be able to:

- Develop an understanding of the theoretical foundations that inform the field of arts in medicine and practice of the arts in community health programs
- Understand the roles of the arts in promoting health education, health literacy and disease prevention in community settings
- Develop understanding of the knowledge and skills necessary to engage the arts in a health context
- Develop professional-level practical skills in using the arts to address health in both healthcare and community settings
- Achieve an advanced level of understanding of arts in public health practice
- Gain experience in and develop understanding of the administrative structures that support arts in public health programs and initiatives
- Understand core issues, contemporary trends, critical debates, and research central to the arts in public health
- Identify core competencies including ethical frameworks, program development and assessment, grant writing, and cultural competency

Course Contents:

1. International coverage of creative arts demonstrates their role in very contrasting societies around the world
2. Illustrates how implementing creative arts practices in the promotion of health and wellbeing is compatible with evidence-based practices
3. Introduces the role of the arts across the whole life-span, from birth to the end of life

4. Demonstrates the value of the arts in different social settings communities, schools, hospitals, prisons
5. Offers detailed case studies of creative arts practice in promoting wellbeing and health
6. Use of Music and Films to teach health

Recommended Readings:

1. Stephen Clift, Paul M. Camic Oxford Textbook of Creative arts, Health & Well being.
2. Raymond MacDonald & Gunter Kreutz Music Health & Well being.

6.12 Community Dentistry

Learning Outcomes:

After studying this course, you should be able to:

- Fundamental knowledge of the philosophy, principles, and practices of Dental Public Health.
- Specialized knowledge and skills for practicing Dental Public Health, including research, administration, and teaching

Course Contents:

1. Plan oral health programs for populations.
2. Select interventions and strategies for the prevention and control of oral diseases and promotion of oral health.
3. Develop resources, implement, and manage oral health programs for populations.
4. Incorporate ethical standards in oral health programs and activities.
5. Evaluate and monitor dental care delivery systems.
6. Design and understand the use of surveillance systems to monitor oral health.
7. Communicate and collaborate with groups and individuals on oral health issues.
8. Advocate for, implement, and evaluate public health policy, legislation, and regulations to protect and promote the public's oral health.
9. Critique and synthesize scientific literature.
10. Design and conduct population-based studies to answer oral and public health questions.

Recommended Readings:

[Geoffrey L. Slack, Brian A. Burt](#) Dental Public Health: Introduction to Community Dentistry

1. Robert Ireland Textbook of Clinical Hygiene & Therapy
2. Health Council of Netherland Perspectives on oral health care
3. N. Michigan Ave American Dental Hygiene Association Dental Hygiene Education.

5.13 Community Psychiatry

Learning Outcomes:

After studying this course, you should be able to:

- Genetic factors and Physical constitution of prevention psychiatry
- Understand psychosomatic and somatopsychic interaction
- Organic states
- Effective disorder and Management of psychiatric disorder in Pakistan

Course Contents:

1. Organizations of community mental health
2. Severe mental disorder
3. Etiology mental illness
4. Classification of psychiatric disorder
5. The magnitude of mental illness in Pakistan
6. Common community mental health problems in Pakistan
7. Community psychiatric health problem in the light of WHO report 2001
8. Prevention of mental illness
9. Operation of community psychiatry
10. Community psychiatry Team

Recommended Reading:

1. Hunter L. McQuishon & Others Handbook of Community Psychiatry
2. Anderson E.W. Psychiatry Tindall & Cox Ltd. London
3. Gelder. Gath & Mayou Oxford Textbook of Psychiatry

5.14 Community Nursing

Learning Outcomes:

After studying this course, you should be able to:

- Understand and differentiate between community and clinical nursing
- Current nursing trends
- Leadership and communication
- Legal practices in nursing in community nursing care
- Role of Community Health Nursing in district health setup

Course Contents:

- 1 Concepts of Community Health Nursing.
- 2 Rules and functions of Community Health Nursing.
- 3 Family Health Nursing.
- 4 Three ways Florence Nightingale influenced the department of nursing history, contribution of early civilization to care of sick
- 5 Discipline of nursing, what is nursing, definition of nurses functions, major nursing theories
- 6 Nursing trends and issues, 100 year debate. accelerating change, nursing education, responding to an inevitable future
- 7 Leadership for an era of change, nursing autonomy, a leader among leaders, perspective of power
- 8 Ethical issues in nursing and health care / what creates ethical dilemmas. factors that influence ethical decision making theories, codes of ethics
- 9 Legal aspects of nursing practice. Litigation trends in health care. application of legal principles
- 10 Management of nursing services. the evolving practice of nurse executives

- 11 Organization of nursing patient care. The nursing department division. Patient care department division.
- 12 Changing health care, delivery methods, services line models. patient focused care, emerging models for nursing care delivery.

Recommended Readings:

1. Marjorie Beyers The Management of Nursing Services D-18
2. L.Y. Kelly & L.A. Joel The Nursing Experience D-8
3. B.T. Basavanhappa - Community Health Nursing.D-10

5.15 Food Safety

Learning Outcomes:

After studying this course, you should be able to:

- Manage systems for good personal hygiene;
- Control food allergens and food hazards within the business;
- Maintain an effective incident management system;
- Explain the characteristics of poorly constructed water wells;
- Design and operate a system to minimize the risk of pest-infestation in both product and facility;
- Follow safe practices in food preparation areas to avoid accidents;
- Understand the role and influence of the manager on the food safety operation team.

Course Contents:

1. Sanitation & Food Industry
2. The relation of micro organism
3. The relation of Allergen to sanitation
4. The relation of food contamination
5. Personal hygiene & sanitary food handling
6. Role of cleaning compounds in food safety
7. Sanitizers
8. Dairy process plant sanitation
9. Fruit & vegetable sanitation
10. Beverage plant sanitation
11. Butcher sanitation
12. Street food hawkers sanitation\
13. Time & Temperature control
14. Personal hygiene in food professionals
15. Cross contamination prevention
16. Toxic chemicals & Pest control

Recommended Readings:

1. Manual of Food Safety USDA, FSIS Corporative Agreement
Restaurant X - Food Safety Training Manual
2. WHO Nutrition and Food Safety in Pakistan

5.16 Health Marketing

Learning Outcomes:

After studying this course, you should be able to:

- Understand the basic marketing principles
- 04 Ps of marketing
- Advertisement and promotion
- Ethics in marketing
- To understand and describe the principles of marketing and their application in health and health care
- To understand the strategic role of marketing in organizations Strategic
- To apply marketing approaches, tools and techniques in analyzing and solving marketing issues
- To understand the differences and similarities of marketing approaches and tools and their application in private and public health settings, including the use of social marketing
- Explore and analyze current and future marketing issues and trends related to health and health care
- Develop a marketing plan for an organization
- To effectively communicate marketing related concepts and strategy
- Have an understanding of marketing and the marketing planning process.
- Have an understanding of the essential components of marketing strategy formulation in the healthcare environment.
- Have an overall understanding of the effect that marketing has on a health care organization's long-term success.
- Understand the internal and external factors that influence consumer decision making related to healthcare.
- Familiarize students with Marketing of Healthcare services in the Kingdom.
- Understand and Develop marketing strategies aimed at satisfying customer demands and preferences in a health care environment.

Course Contents:

1. Basic understanding of marketing
2. Social, societal and health marketing
3. The History of Marketing in Healthcare
4. Health care administration and marketing
5. Strategic marketing
6. Sale promotion and advertisement
7. Budgeting and financing
8. Marketing and the Healthcare Organization
9. Healthcare Products and Services
10. Emerging Marketing Techniques
11. Marketing Research in Healthcare

Recommended Reading:

1. Philip Kotler Marketing Management Pearson Education/PHI, 2003.
2. Kotler & Keller Service Marketing Management

3. Richard K. Thomas. (2010). Marketing Health Services: Second Edition. Foundation of the American College of Healthcare Executives.
4. John L. Fortenberry Jr. (2010). Heath Care Marketing: Tools and Techniques, Third Edition. Jones and Bartlett.
5. Croufer & Simon (2009). Putting Patients At The Center of A New Business Model. Prism.

5.17 Addiction and Social Rehabilitation

Learning Outcomes:

After studying this course, you should be able to:

- Understand the basic concepts of Addiction and social rehabilitation in practice
- Community diagnoses for addiction
- Substances of abuse
- Pattern of drug uses
- ICD 10 Criteria
- Social psychology of Addiction
- Demand for Addiction Treatment
- Care Planning and Management
- Treatment of Opiate Addiction
- Treatment of Non-Opiate Addiction
- Addiction Treatment in the Criminal Justice System
- Social Support and Reintegration
- Co-ordination and Monitoring of Strategy
- Rehabilitation practices and harm reduction

Course Contents:

1. Introduction to Counseling and Rehabilitation
2. Ethical and Legal Aspects of Substance Abuse and Rehabilitation Counseling
3. Psychiatric Rehabilitation
4. Counseling Theories in Addiction and Rehabilitation
5. Counseling Theories in Addiction and Rehabilitation
6. Prepracticum in Substance Abuse and Clinical Counseling
7. Substance Abuse Counseling
8. Human Growth and Development in Addictions and Rehabilitation Counseling
9. Rehabilitation Evaluation (i.e. Assessment)
10. Treatment of Drug and Behavioral Addictions

Recommended Reading:

1. Neil T. Anderson Overcoming Addiction Behavior
2. Anne M. Fletcher Inside Rehab

5.18 Nuclear Medicine

Learning Outcomes:

After studying this course, you should be able to:

- Understand the basic knowledge of nuclear radiation
- Source of nuclear radiation
- Hazards to exposure

- Positive role in medical and other industries

Course Contents:

1. Introduction to nuclear medicine
2. Exposures to nuclear material
3. Origin & nature of Radiation
4. Terrestrial Radiation
5. Man made source of Radiation
6. Problems of nuclear radiation
7. Biological effects of radiation
8. Radiation effects
9. Evolution of permissible doses
10. Protection from radiation
11. Use in medical diagnostic and therapeutics
12. Radioactive waste disposal
13. Safety & regulatory control

Recommended Reading:

1. ICRP Publication 8. The evaluation of Risks from Radiation
2. Knoll Nuclear Radiation Detection
3. United States Atomic Energy Commission, Medical Aspects of Radiation Accidents, 1963
4. Donald R. Bernier Nuclear Medicine Published by Mosby
5. M. Ilyas Public Health and Community medicine

5.19 Sports Medicine

Learning Outcomes:

After studying this course, you should be able to:

Understand basic concepts of sports medicine;

- Medical supervision and care of athlete
- Physical education (Special and adapted)
- Exercise for prevention of chronic degenerative disease
- Therapeutic exercise in the treatment of physical disorder of disease
- Understand the basic structure of muscles, nerves and bones and its prevention during sports activities
- Basic exercises to strengthen the muscles
- Understand the relationship between brain and body

Course Contents:

1. The history of Sports medicine
2. Physiology of Physical Fitness
3. Nutrition of the Athlete
4. Special care of the Athlete
5. Special consideration of female athlete
6. Role of sports physician in the practice of sports medicine
7. Rehabilitation

8. Ergogenic AIDS/DOPING

Recommended Reading:

1. Ryan AJ, Allman Jr FD Sports Medicine Academic Press New York
2. Davis EC, Logan GA Biophysical values of muscular activity
3. McDonald R, keen CL-Iron, Zinc and Magnesium and Athletic performance Sports Medicine 1988

5.20 Adolescent and Sexual Health

Learning Outcomes:

After studying this course, you should be able to:

- Define and discuss community health, determinants of sexual health, and health advocacy.
- Identify socio-cultural and political barriers, as well as individual barriers, to health, with a focus on sexual health, and strategies to confront those barriers.
- Demonstrate critical thinking skills related to community and sexual health.
- Demonstrate skills of intervention to provide other students with information, options, and resources regarding community and sexual health.

Course Contents:

1. Welcome, introductions, course overview, ground rules, expectations
2. Empowerment, oppression, privilege, social justice
3. Anatomy & Physiology Sexual Response Cycle Menstrual Cycle, Conception, Contraception
4. Sexually Transmitted Infections
5. HIV/AIDS
6. Sexual Assault
7. Gender, Sexual Orientation, Heterosexism & Homophobia
8. Technology & Sexuality
9. Relationships & Communication
10. Body Image, Media & Sexuality

Recommended Reading:

1. Josefina J. Card & Tabitha Benner Adolescent Sexual Health Education An Activity Source Book
2. Andrew L. Cherry International Handbook on Adolescent Health and Development the public health program

5.21 Risk Management

Learning Outcomes:

After studying this course, you should be able to:

- Describe general principles and concepts of enterprise risk management
- Explain basic legal concepts associated with health care risk management
- Describe key structural elements of a risk management program
- List the steps in the risk management process
- Explain risk exposures related to documentation and the medical record
- Describe the concept of risk financing, insurance and claims administration
- Explain risk exposures associated with occupational health, safety and the environment
- Analyze a comprehensive risk management and patient safety program

Course Contents:

1. Risk management understanding and assessments
2. Types of Risks
3. OT risk management
4. Clinical laboratory and radiation risk management
5. Hospital waste risks
6. Development of a Risk Management Program
7. The Process of Professional Regulation
8. Identification of Organizational Risks and Ethics
9. Risk Financing Insurance

Recommended Readings:

1. Risk Management Handbook for Health Care Organizations: Student Edition, Roberta Carroll (Editor). American Society for Healthcare Risk Management. Published by Josey-Bass, 2009

Additional resources will be assigned via University's internet learning platform (Sakai)

5.22 Geriatrics

Learning Outcomes:

After studying this course, you should be able to:

- Understand the concept of geriatric studies
- Aging and theories
- Basic concepts of geriatric ailments
- Management practices of geriatric disorder

Course Contents:

1. Introduction to geriatrics Gerontologic Assessment
 - Mechanisms of Ageing
 - Doctor Patient relationship
 - History Taking and physical examination
2. Theories of aging Physiology of aging; myths surrounding aging; age-related changes in cardiovascular system, respiratory system, urinary system, gastrointestinal system
3. Healthy Ageing Health Promotion and ageing
4. Psychiatric and Behavioural Issues Common psychiatric Disorders
5. Neurological Conditions
 - Falls
 - Neurodegenerative conditions
 - Dementia
 - Alzheimer's
 - Confusional States
6. Special Issues
 - Medical Conditions Chronic diseases
 - Systems approach endocrine, reproductive, immune)
 - ENT and Eye Conditions
7. Nutritional Needs
8. Ethical issues
9. Rehabilitation of elderly patient Palliative Care

Recommended Readings

1. Ranjit N Ratnaike Practical guide to geriatric Medicine (BK 1)
2. Gerontology Care Complied Notes (BK 2)
3. OP Sharma Geriatric Care; Viva Books Private Limited (BK 3)
4. CS Kart The Realities of Aging: An introduction to Gerontology; publisher Allyn and Bacon, Inc. Boston, MA. 2nd edition (BK 4)
5. Florence, Lieberman, Morris F Collen Aging in Good Health A quality Lifestyle for the Later Years Insight Books
6. Steve Iliffe Linda Patterson, Mairi M Gould Health Care for Older People Mgt in MGP General Practice - BMJ

Prepared by: Dr. Inayat Thaver, Community Health Sciences, BUMDC

Annex 1:**ADDITIONAL REQUIREMENTS AS IDENTIFIED IN ANNEX B PARA 13 TO 17**

	Year1-2020	Year2 2021	Year3 2022	Year4 2023	TOTAL
Program	BSc.	BSc + MSc/MPhil PH	BSc + MSc +FCPS	BSc + MSc +FCPS+PhD	
# of students	BSc 50 2 semesters	100+25 BSc 2 old +2 new Semesters MSc/MPhil PH 3 Semesters	150+50+5 BSc 4 old +2 new Semesters MSc/MPhil PH 2 old +3 new Semesters + FCPS	200+50+0+5 BSc 6 old +2 new Semesters MSc/MPhil PH 2 old +3 new Semesters + FCPS +PhD 3 semesters	200 BSPH 50 MSPH 10 PhD
# of Faculty (Para 13)	7; 1 Prof. 1 Asst. Prof. 3 Lectr. 2 part-time (for English/Math etc)	7 + 5 + All of 1st year + 1 Prof. 1 Asso. Prof 1 Asst. Prof. 3 Lectr.	7+5+ All of 1st & 2nd year + 1 Prof. 1 Asso. Prof 1 Asst. Prof. 3 Lectr.	7+5+6+ All of 1st & 2nd 3rd year + 1 Prof. 1 Asso. Prof 1 Asst. Prof. 3 Lectr.	4 Specified Departments each having 1 Prof 1 Asso. Prof 1 Asst. Prof. 3 Lectr.
	9,600,000	14,600,000	24,600,000	36,600,000	

Facilities for faculty <i>(NOT IDENTIFIED IN SOP OR TAKEN FOR GRANTED)</i>	2 rooms for Prof. 1 big room having cubicles for demonstrators 1 big meeting room for faculty	All of 1st yr. + 3 rooms for Prof accommodating + Demonstrators in cubicles	All of 1st & 2nd yr. + 3. rooms for Prof +accommodating Demonstrators in cubicles	All of 1st , 2nd & 3rd yr. + 3 rooms for Prof. +accommodating Demonstrators in cubicles	Facilities for faculty <i>(all should have basic computer facilities and furniture as of standard)</i>
COSTING	1,200,000 3,600,000	1,800,000	1,800,000	1,800,000	Working Prof room 15x20 =300sq ft Hall for lecturers 40x50 ft = 2000sqft @ pkr 2000 per sq ft
Additional Skilled workers (para 14)	*1 Manager/Director BSPH Program (MBA + adequate experience) *1 Administrative Officer (any Master level with adequate experience of managing audio-visuals and IT support) *1 Laboratory Incharge *1 office boy 1 Librarian with relevant qualifications	*1 Manager/ Director MSPH Program (MBA + adequate experience) *1 Administrative Officer (any Master level with adequate experience of managing audio-visuals and IT support)	*1 Research Lab Incharge having IT/ Bio-Statistics experience *1 office boy	*1 Extended CHS Lab. Officer OR Community Mobilizer * 1 Office Boy	4 Managers 1 PhD coordinator 2 Administrative Officers 4 Office boys

	1 Assistant Librarian	*1 office boy			
COSTING	90,000 60,000 40,000 25,000 50,000 35,000 Total x 12 months x 4 years = 20640000	150000 75000 50000 30000 Total x 12 months x 4 years 14640000	75000 30000 Total x 12 months x 4 years 3780000	75000 30000 Total x 12 months x 2 years 2520000	
Additional class rooms (Para 15)	1 Lecture Hall having capacity of 100 students; 3 Tutorial rooms having capacity of at least 20-25 students ;1 Multi-disciplinary Lab. + <u>Audiovisual facilities; chairs, others</u> <u>Students common room boys + girls</u>	All of 1st yr + 1 Lecture Hall; 3 Tutorial rooms; (as of identified in the first year)	All of 1st & 2nd yr + 1 Lecture Hall; 2 Tutorial rooms; (as of identified in the first year)	All of 1st , 2nd & 3rd yrs + 1 Lecture Hall; (as of identified in the first year) 1 room for PhD scholars having capacity of at least 10-15 student with U shaped seating arrangement and audio-visuals	3 lecture halls 8 tutorial rooms

				+ at least 10 cubicles for PhD scholars;	
COSTING	Lecture hall size 1500 sq ft Tutorial size 800 sq ft @ pkr 2000 per sq ft Lecture hall -1- pkr 3,000,00 + Tutorial 3- pkr 1,800,000	2000000 1 lectur Hall 3,000,000 + Tutorial 3 1,800,000	1000000 1 lecture Hall 3,000,000 3 tutorial 4 1,800,000	1000000 500000 300000 Lecture 1 3,000,000 Class Room for PhD 1000 sq ft – 1,500,00 + Cubicle s1,000,000	
Additional requirements for labs. (Para 16)	Standard multi-disciplinary lab.		1 Research resource lab Having capacity of at least 50-75computers and audio-visual with some silent practice rooms	1 extended CHS lab (as of current CHS but with advanced facilities, especially for post-graduates	3 Labs. With mutually exclusive facilities as identified
COSTING	1,000,000		7,000,000	1,000,000	
Additional requirements	A big “Public Health” library having a capacity of at least 100 seats and	All course and reference Books identified	All course and reference Books identified	All course and reference Books identified according	

for Books (Para 17)	10 computer access points + All course and reference Books identified according to courses and semester in each year	according to courses and semester in each year + Additional Books for Post-graduate levels	according to courses and semester in each year + Additional Books for Post-graduate levels	to courses and semester in each year + Additional Books for Post-graduate levels	
COSTING	5,000,000 Seating cost Computers cost Books cost	500,0000	5000,000	5000,000	
Progress in offering PH courses	Bachelor of Science in Public Health (BSPH)	Master of Science in Public Health MSPH/MPhil	FCPS (Community Medicine)	PhD in Public Health	

BACHELOR OF SCIENCE (SUPPLY CHAIN MANAGEMENT)
NEW LAUNCH PROPOSAL

(Title of the program)

A. ACADEMIC DETAILS	
1	Faculty/Department: Management Sciences, BUKC
2	Name of the Program: BS (SCM)
3	Mission of the Program: BS (SCM) prepares the future Planners, Business Entrepreneurs, Managers and Corporate Governors to safeguard stake holders' Business Ventures through management of supply chains of goods and services. The program also inculcates ethical practices in future supply chain managers to cope up with the challenges emerging from complex regional and global businesses especially those under CPEC.
4	<p>Objectives of the Program:</p> <ul style="list-style-type: none"> ▪ To prepare future Supply Chain Planners and Professionals for developmental growth and employment opportunities. ▪ To develop commodity flow acumen among the students to get professional degrees' in commensuration to their growth in the job market. ▪ To promote ethical supply chain and green supply chain practices for development of a vibrant, forward looking and balance society. ▪ To prepare the students for meticulous supply chain planning of various projects for mutual benefits and collaborative well-being.
5	<p>Expected Outcomes of the Program: Graduates of BS (SCM) will be able to: -</p> <ul style="list-style-type: none"> ▪ Prepare, analyze and interpret Supply Chain Business Opportunities and undertake business plans especially in SMEs. ▪ Put across viability analysis of various projects and cost-benefit reviews of Supply Chain Businesses in logical and convincing manners. ▪ Recognize the rationale behind the growth and development of modern world supply chain businesses especially under CPEC. ▪ Develop an in-depth knowledge of the underlying principles of SCM and provisions of interface between knowledge and practice.
6	<p>Rationale for the Program:</p> <ul style="list-style-type: none"> ▪ Cost-effective commodity flows have always maintained their relevance with economic growth and development of societies, for Pakistan, it has become essential in view of forthcoming CPEC projects and opportunities. ▪ The program provides multiple employment opportunities in public as well as private sectors and upward growth in Regional and Global Businesses ▪ Our initial survey reflects potential of students' pool for admission, provided we succeed in creating the right kind of awareness.
7	Brief Description of the Program: Bachelor in Supply Chain Management is designed to develop qualified and educated workforce on commodity flow business. It will explore theoretical concepts and share regional and global best practices in SCM using case studies. The professional deficiency in the services sector can consequently be covered by demonstrating the skills necessary to tackle problems within the complex world of SCM. It

	is a four years' degree program for students who have passed higher secondary / equivalent schooling / examination under HEC rules.
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>) Bahria University Karachi, Islamabad and Lahore Campuses under the Departments of Management Sciences / Business Studies.
10	Program Scheduling Format: <ul style="list-style-type: none"> • Morning/Evening/Weekend (<i>tick one/strike-through the ones not applicable</i>): Morning • Bi-Semester/Trimester/Semester Summer Session/Annual/Bi-Annual (<i>tick one/strike-through the ones not applicable</i>): Bi-Semester
11	Proposed Date of Commencement: Spring 2020
12	Mode of Study/Examination: As per BU Examination Rules
13	Additional Faculty Member(s) Required: (<i>Indicate if there is a requirement for additional faculty members, fulltime/visiting, along with qualifications.</i>) 1 st and 2 nd Years' requirement. Regular: 1 (MPhil / MS) Visiting: 1 (MPhil / MS)
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"> ▪ First Semester: 1 ▪ Additional one classroom with the start of every semester till 8th semester.
16	Additional Requirement for Laboratories: (<i>The requirement is to include the number of laboratories, their equipment and their capacities.</i>) One computer lab would be required; may be shared within existing labs.
17	Additional Requirement for Books, Subscriptions, Memberships to Online Research Sites/ Repositories: Following books are required: - <ul style="list-style-type: none"> ▪ Existing stock of books partially meets the requirement. Digital library access also supplements the existing stock. ▪ About 100 more books would be required on contemporary thought process by different writers on SCM.
18	Minimum Entry Level: HSSC / Equivalent with 50% Marks
19	Admission Criteria: As per BU Rules for BBA / A&F Program
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>). Nil
21	Number of Admissions Expected for First Intake: 20 - 25
22	Number of Admissions Planned/Expected for Subsequent Intakes: 25-30 / semester, this is minimum, we expect more students with awareness from 3 rd semester onwards like we experienced in the case of BS (A&F)

23	FBOS: (Indicate the FBOS meeting reference and Item No): 28 th FBOS Competent Authority: (Indicate the File No & date; reproduce the decision): Academic Council
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')
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:- Semester: Yes, Number of Semester: 8 Total Number of Credit Hours: 135
3	Expected fee to be charged based on Cost & Benefits Analysis: <ul style="list-style-type: none"> ▪ 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): <ul style="list-style-type: none"> ▪ Tuition Fee / Semester / Student: Rs 86400 ▪ Admission Fee and other Charges / Student (One Time): 26000 ▪ Earning from First Two Intakes: $40 \times 86400 = 3456000 + 40 \times 26000 = 1040000$ ▪ Total of first two intakes = Rs 44,96,000
6	Expected Earnings for the Next Five Years (B6): <ul style="list-style-type: none"> ▪ 1st Year Earning: Rs 44,96,000 (4.5 Millions) ▪ 2nd Year Earning: $44,96,000 + 3456000 = 79,52,000$ (7.9 Millions) ▪ 3rd Year Earning: $79,52,000 + 3456000 = 11,40,8000$ (11.4 Millions) ▪ 4th Year Earning: $11,40,8000 + 3456000 = 14,86,4000$ (14.9 Millions) ▪ 5th Year Earning: $14,86,4000 + 3456000 = 18,32,0000$ (18.3 Millions)
7	Total Estimated Salaries of all Additional Human Resources per annum (B7): (Show working) Salary Estimates of Faculty for 1 st Year: 16,00,000 Salary Estimates of Supporting Staff for 1 st Year: 200000 Total of Faculty and Supporting Staff: Rs 18,00,000 (Approximately)
8	Cost of Additional Laboratory Equipment/Tools (B8): (show working) Existing lab facilities shall be used
9	Cost of Additional Classrooms 1st Year (B9): (Include furniture, technical aids) 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 100 Books: 100,000
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: 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 Program (B14): [Add B (7) to B (12)]: Rs 30,20,000
15	Net Cost of the Program (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): (show details & working; add 10% towards all expenses in subsequent years.) <ul style="list-style-type: none"> ▪ 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)] <ul style="list-style-type: none"> ▪ 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.

Annex A**Roadmap: Bachelor of Science (Supply Chain Management) - Management Sciences, BUKC****Semester-1**

S #	Codes	Course	Level	CH	Pre-requisite
1	ENG 105	Functional English	Core	3	
2	QTM 101	Business Math - I	Core	3	
3	ECO 110	Micro-Economics	Core	3	
4	PAK 101	Pakistan Studies	Core	3	

5	ISL 101/ SOC 360	Islamic Studies/Ethics	Core	3	
6	MGT 111	Principles of Management	Core	3	

Semester-2

S #	Codes	Course	Level	CH	Pre-requisite
1	ENG 132	Oral Communication & Public Speaking Skills	Core	3	
2	MIS 163	IT in SCM	Core	3	
3	HSS 202	Introduction to Sociology	Core	3	
4	ACC 102	Financial Accounting	Core	3	
5	ECO 121	Macro-Economics	Core	3	
6	SCM 101	Introduction to SCM	Core	3	

Semester-3

S #	Codes	Course	Level	CH	Pre-requisite
1	BCM 204	Business Communication	Core	3	
2	QTM 110	Business Statistics	Core	3	
3	ACC 304	Managerial Accounting	Core	3	
4	MKT 110	Principles of Marketing	Core	3	
5	QTM 120	Business Math – II / Numeracy Skills	Core	3	
6	SCM 201	Introduction to Procurement Management	Core	3	

Semester-4

S #	Codes	Course	Level	CH	Pre-requisite
1	MGT 211	Self-Management	Core	3	
2	HRM 353	Human Resource Management	Core	3	
3	FIN 220	Finance of SC Managers	Core	3	
4	SCM 221	Logistics and Distribution	Core	3	
5	OPM 360	Operation and Production Management	Core	3	
6	SCM 301	Inventory and Warehouse Management	Core	3	

Semester-5

S #	Codes	Course	Level	CH	Pre-requisite
1	MGT 311	Career Exploring Management	Core	3	
2	MGT 435	Project Management	Core	3	
3	MIS 310	SC Analytics and Information System	Core	3	
4	MGT 312	Quality Management and Lean Thinking	Core	3	
5	QTM 205	Statistical Inference and Quantitative Research	Core	3	
6	SCM 302	Supply Network Planning and Design	Core	3	

Semester-6

S #	Codes	Course	Level	CH	Pre-requisite
1	HSS 301	Social and Psychological Development	Core	3	
2	SCM 320	Import Export Management	Core	3	
3	SCM 321	Multimodal Transport Management	Core	3	
4	SCM 402	Legal Aspects of Supply Chains	Core	3	
5	RMT 240	Research Methods & Techniques	Core	3	
6	SCM 323	Innovations in SC with E-Commerce	Core	3	

Semester-7

S #	Codes	Course	Level	CH	Pre-requisite
1	SCM 401	Supply Chain Risk Management	Core	3	
2	RMT 360	Operations Research	Core	3	
3	SCM 421	Globalization and Outsourcing Strategies	Core	3	
4		Elective-I			
5		Elective-II			

Semester-8

S #	Codes	Course	Level	CH	Pre-requisite
1	MGT 463	Corporate Skills	Core	3	
2		Elective-III (Capstone Project)	Elective	3	
3		Elective-IV	Elective	3	

4	CLE 401/ ARA 401	Foreign Language (Chinese / Arabic)	Core	3	
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Note: In semester 6, PNSL Undergraduate to study **PRO 416** (Naval Law & General Regulations) in lieu of **SCM 402**(Legal Aspects of Supply Chains)

List of Electives

Planning and Procurement

S #	Codes	Title of the Course	CH	Remarks
1.	SCM 654	Management and Leadership	3	
2.	SCM 649	Contemporary Issues in Supply Chain Management (Seminars)	3	
3.	SCM 655	Customer and Supplier Relationship Management	3	
4.	SCM 648	Entrepreneurship in Supply Chain Management	3	
5.	SCM 647	ERP and SCM Systems	3	
6.	SCM 633	Master planning of Resources in SCM	3	
7.	SCM 617	Demand Forecasting	3	
8.	SCM 646	Business Process Reengineering	3	
9.	SCM 645	Contract Management	3	
10	SCM 636	Green Supply Chain Management	3	

Warehousing and Logistics

S #	Codes	Title of the Course	CH	Remarks
1.	SCM 652	Shipping, Freights and Port Operations	3	
2.	SCM 654	Management and Leadership	3	
3.	SCM 651	Humanitarian Logistics	3	
4.	SCM 649	Contemporary Issues in Supply Chain Management (Seminars)	3	
5.	SCM 648	Entrepreneurship in Supply Chain Management	3	
6.	SCM 647	ERP and SCM Systems	3	
7.	SCM 646	Business Process Reengineering	3	
8.	SCM 653	Health Safety Environment (HSE) in Warehouse	3	
9	SCM 324	Supply Chain Performance Measurement	3	

Courses Descriptions: Bachelor of Science (Supply Chain Management) Management Sciences, BUKC

Courses Description

Functional English

The purpose of this course is to develop the English-language proficiency of prospective elementary school teachers and to help them become confident in reading, writing, speaking, and listening to the English language. Instead of teaching grammar in isolation and only at sentence level, this course is based on developing the language abilities of Student Teachers through an integrated approach that provides opportunities to develop their listening, speaking, reading, and writing skills. With a focus on social interaction, the course draws specific attention to the accurate use of structures, improvement of pronunciation, and development of active vocabulary in descriptive, narrative, and instructional texts.

Course Contents:

1. Parts of speech and use of articles
2. Sentence structure, active and passive voice
3. Analysis of phrase, clause and sentence structure
4. Transitive and intransitive verbs

Learning Outcomes:

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

1. Practice correct English in speaking and writing.
2. Comply even complex English language texts.
3. Show sound vocabulary and skills to use English in professional life.

Reference Material:

P. C. Wren & H. Martin "High School English Grammar & Composition"
Colin W. Davis & Andrew J. Watts New Expressway For English 1 (New Edition)

Business Mathematics

It is designed to introduce the basic mathematical skills needed to understand, analyses, and solve mathematical problems encountered in business and finance, and in investment decision making. There are no prerequisites for MATH 244; however, students are expected to be able to perform the basic arithmetic operations—addition, subtraction, multiplication and division -with ease, and to have some familiarity with fractions, with algebraic operations, and with some basic mathematical principles.

Course Contents:

It will cover Mathematical Operations, Basic Algebra, Ratios, Proportions, and Percentages, Marketing Mathematics, Applications of Linear Equations, Data Analysis and Statistics, Principles of Simple Interest, Principles of Compound Interest, Annuities, Loans and Mortgages, Bonds and Sinking Funds & Investment Decisions.

Learning Outcomes:

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

1. Demonstrate mastery of mathematical notions that are foundational in business mathematics, including functions, linear systems and their solutions.
2. Use ratio, proportion and percent in the solution of business problems.
3. Solve business problems involving commercial discount, markup and markdown.

Reference Material:

Business Mathematics & Statistics, Prof. Miraj Din Mirza (2004)

Jerome, F. Ernest, and Tracy Worswick. Business Mathematics in Canada, 9th Edition. Toronto, ON: McGraw-Hill Ryerson, 2017.

Microeconomics

It is an introductory course that teaches the fundamentals of microeconomics. This course introduces microeconomic concepts and analysis, supply and demand analysis, theories of the firm and individual behavior, competition and monopoly, and welfare economics. Students will also be introduced to the use of microeconomic applications to address problems in current economic policy throughout the semester.

Course Contents:

1. Consumer behavior
2. Theory of the firm
3. Competitive market equilibrium
4. Monopoly
5. Factor markets
6. General equilibrium theory
7. Welfare economics

Learning Outcomes:

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

1. Describe fundamental economic theories, models and concepts like economic scarcity and resource allocation
2. Understand how price elasticity and income elasticity impact demand, and survey the forms of government intervention used to influence supply
3. Recognize the significance of consumer choice in economics, and examine theories explaining consumer preference and decision making
4. Assess the impact of budget lines, normal and superior goods, the rate of transformation, and other factors on supply and demand
5. Consider how an assessment of fixed, variable, and total costs is used to make short-run production decisions; differentiate these costs from those associated with long-run production

Reference Material:

Perloff, Jeffrey M. *Microeconomics*. 5th ed. Addison Wesley, 2008.

Pakistan Studies

Historical Perspective, Ideological rationale with special reference to Sir Syed Ahmed Khan, Allama Muhammad Iqbal and Quaid e Azam Muhammad Ali Jinnah. Factors leading to Muslim separatism, People and land, Muslim advent, Location and Geo-physical features. Government and Politics in Pakistan, Political and constitutional phases (1947-58, 1958-71, 1971-77, 1977-88 1999 onward), Contemporary Pakistan, global issues of war and peace, economic and political integration, poverty, human rights etc.

Course Contents:

1. Historical Perspective People and Land
2. People and Land: Ethnicity and Socio-Cultural Diversity
3. Economic Issues
4. Historical Perspective Ideological Rationale

5. Historical Perspective Factors Leading to Muslim Separatism
6. Political Movement

Learning Outcomes:

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

1. Learn the process of the foundation of Pakistan
2. Examine the struggle for the freedom movement
3. Understand the philosophical, socio-political and economic foundations of the country
4. Develop knowledge of foundations of Pakistan and its political institutional outline and functional performance
5. Learn about the ups and downs Pakistan has passed through in her search of democracy.

Reference Material:

Pakistan Studies, Sarwar (2002)

Pakistan Studies by Ikram Rabani

Principles of Management

Students examine a basic framework for understanding the role and functions of management and an explanation for the principles, concepts and techniques that can be used in carrying out these functions.

Course Contents:

1. The four key management functions: planning, organizing, leading and controlling
2. Organization design and evolution; managing change and innovation
3. Leadership, supervision, teams and conflict management

Learning Outcomes:

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

1. Examine management principles and concepts as they apply to business situations.
2. Classify the steps of problem solving and decision making in organizations.
3. Recognize challenges in the accomplishment of good managerial performance.
4. Illustrate how business ethics and social responsibility apply to organizations.

Reference Material:

Management (Recommended Book), Robbins & Mary (11th ed)

Introduction of SCM

This course provides an understanding of fundamental concepts of supply chain management. All functional areas of supply chain management are explored in an integrated view of procurement, manufacturing and operations management, transportation and logistics, inventory and warehousing, demand planning, scheduling, network design, collaboration and performance measurement.

Course Contents:

1. SCM Planning
2. Procurement
3. Production
4. Inventory
5. Logistics

Learning Outcomes:

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

1. Understand the importance of Purchasing, Logistics and Supply Chain Management in the critical decision making process of any organization.
2. Get familiar with numerous production processes and service systems affected by SCM.
3. Progress an aptitude to identify what makes a specific issue important to contracting and procurement. Carry out research and analyze recognized or promising subject in the field of contracting and procurement.

Reference Material:

Supply Chain Management (SCM), Strategy Planning and Operations, Sunil Chopra, Peter Meindl

Oral Communication & Public Speaking Skills

This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support. Students should also demonstrate the speaking, listening, and interpersonal skills necessary to be effective communicators in academic settings, in the workplace, and in the community.

Course Contents:

1. Taking Part in Communication
2. Dealing with Communication Apprehension
3. Ethical Principles of Communication
4. Culture and Ethics
5. Organizing and Presenting Ideas
6. The Role of Culture in Organizational Patterns
7. Process of Listening
8. Listener and Speaker Responsibilities

Learning Outcomes:

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

1. Continue to speak with condensed anxiety by identifying and using communication strategies
2. Use gained skills in the selection of suitable communication behaviors in order to initiate and organize ideas
3. Continue to improve intercultural capability through improved cultural awareness.

Reference Material:

Oral Communication, 10th ed., Samovar and Mills

Oral Communication: Skills, Choices and Consequences, Young and Travis

Islamic Studies/Ethics

Islamic ethics is the study of the methods used by Muslims to discover the best way they should engage with other individuals and the rest of creation. Islamic ethical reasoning is a holistic approach to behavior, reuniting the principles and tools of Islamic law with the exemplary conduct of the prophets, especially the Prophet Muhammad, in a manner that is appropriate to an actual ethical case. By the end of this class, you should be able to argue a controversial ethical issue using the tools and principles of Islamic ethical reasoning.

Course Contents:

1. Principled reasoning in classical Islamic jurisprudence,
2. The theological status of reason in Islam,
3. The principles and priorities of traditional ethical reasoning,
4. The arguments for a goal-oriented approach to ethics,
5. The contemporary emphasis on the context of the ethicist and the construction of religious authority,
6. And the importance of individual moral formation.

Learning Outcomes:

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

1. Describe the basic concept of Islam (faith, pillars and moral value systems etc)
2. Discuss differences between religion, shahri "ah and fiqh.
3. Present Islam as complete code of life (emphasizing ethical standards defined by it)

Reference Material:

Mir Waliullah, "Muslim Jurisprudence and the Quranic Law of Crimes" Islamic Book Service (1982)
H.S. Bhatia, "Studies in Islamic Law, Religion and Society" Deep & Deep Publications New Delhi (1989)

Dr. Muhammad Zia-ul-Haq, "Introduction to Al Sharia Al Islamia" Allama Iqbal Open University, Islamabad (2001)

Business Statistics

Statistics is the art of using data to make numerical conjectures about problems. Descriptive statistics is the art of summarizing data. Topics include: histograms, the average, the standard deviation, the normal curve, correlation. Much statistical reasoning depends on the theory of probability. The main objective is to provide students with pragmatic tools for assessing statistical claims and conducting their own statistical analyses.

Course Contents:

Topics include: chance models, expected value, standard error, probability histograms, convergence to the normal curve. Statistical inference is the art of making valid generalizations from samples. Topics covered include basic descriptive measures, measures of association, probability theory, confidence intervals, and hypothesis testing.

Learning Outcomes:

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

1. Identify different types of variables and produce appropriate graphical displays and descriptive statistics;
2. Understand and apply probability rules and concepts related to various probability distributions;
3. Understand the concept of sampling distributions;
4. Conduct statistical inference including confidence intervals and hypothesis testing.

Reference Material:

Mann, Prem S. Introductory Statistics, 8th ed., NJ: Wiley, 2013.

Sawyer, Julia K. Student Solution Manual: Introductory Statistics, Prem S. Mann, 8th ed., NJ: Wiley, 2013.

Financial Accounting

An introduction to the principles, and practice, of accounting. Emphasis is placed on the fundamentals of recording, adjusting, analyzing, and reporting financial information in accordance

with Generally Accepted Accounting Principles. Includes the study of the accounting for cash, accounts receivable, inventory, fixed assets, accounts payable, liabilities, revenues and expenses.

Course Contents:

1. The accounting cycle: translating companies' operations and decisions into numbers;
2. Understanding accounting as the language of business: users of accounting information and its different purposes;
3. The role of accounting equation in ensuring recording integrity and keeping track of the transactions;
4. The role of accruals in making sense of financial accounting information;
5. The package of Financial Statements: balance sheet, income statement and cash flow statement;

Learning Outcomes:

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

1. Understand companies' transactions (e.g. financing, sale, acquisition of goods/services) through accounting numbers;
2. Assess the financial structure of the company and its implications in terms of profitability;
3. Apply proficiently the double-entry bookkeeping system to record/verify transactions and accounting;
4. Distinguish between cash-based accounting and accrual-based income;

Reference Material:

International Financial Reporting Standards (IFRS), Zubari (Latest Edition)

Macroeconomics

Students examine how the economy behaves at the aggregate level and how national income is measured and determined. Topics include an overview of macroeconomics; measuring gross domestic product, inflation and unemployment; demand including the multiplier process; supply, business cycles, long-term growth; money, banking and monetary policy; inflation; interest rates; stagflation; deficits and fiscal policy; exchange rates and balance of payments; exchange rate policy; purchasing power and interest rate parity.

Course Contents:

1. Background and Overview
2. Macroeconomic Basics
3. The Monetary Sector
4. Stagflation and Deficits
5. The International Sector

Learning Outcomes:

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

1. Locate and interpret macroeconomic data; and identify and explain important macroeconomic concepts.
2. Analyze simple macroeconomic economic models, and use these models to explain and interpret behavior of key macroeconomic variables.
3. Identify current economic issues and debates, then apply simple macroeconomic models to analyze and interpret policy issues.

Reference Material:

Macroeconomics, 8th edition by N. Gregory Mankiw (M).

Operations Research

The purpose of the course is to provide students with the concepts and tools to help them understand the operations research and mathematical modeling methods. These methods will help the students to solve economic issues, which help to make a decision. The main goal is to find the lowest cost or the greatest profit in many linear programming in the economic field issues. The model was used to resolve the issue of transport. There are many of the problems regarding the transfer of goods within a minimum of expenses or the distribution of goods to obtain the maximum profit. It was used as a matter of allocation of activating the role of the distribution functions optimally to get the desired goal as costs or profits.

Course Contents:

1. Introduction to Operations Research (OR)
2. LP formulations (Product Mix problems, Diet problems, blending problems)
3. LP formulations (Scheduling problems, Transportation problems, Assignment problems)
4. LP formulations (Multi-period problems, Balancing problems) Assumptions of Linear Programming
5. Graphical Solutions
6. Simplex Algorithm
7. Transportation Simplex Method
8. Critical Path Method (CPM)
9. Program Evaluation and Review Technique (PERT)
10. Cost-Time Trade-Off Analysis

Learning Outcomes:

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

1. Frame a practical condition into a mathematical model
2. Develop an optimal solution for the problem using appropriate algorithm
3. Develop mathematical vision for popular algorithms developed to solve mathematical programs

Reference Material:

Operations Research: Applications and Algorithms, Wayne L Winston, 4th edition, 2004

Operations research an introduction, Taha, A. Hamdy

Business Communication

Develop effective communication skills for the workplace, from enhancing your professional writing techniques to improving your interpersonal and presentation skills. Good communication skills are an important element for a business or organization to function effectively, and for the development of good relationships between work colleagues within a business and with clients and customers outside a business.

Course Contents:

1. Identify key principles in business communication
2. Writing in Business
3. Written Communication
4. Research
5. Visual Media
6. Reports

7. Developing and Delivering Business Presentations

Learning Outcomes:

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

1. Write e-mails, memos, and business letters with different tones and for different purposes
2. Understand the importance of being an effective business communicator in today's changing workplace
3. Communicate effectively with colleagues in meetings by employing individual strengths and implementing knowledge of different working styles
4. Deliver professional oral presentations
5. Write a polished resume and cover letter and effectively prepare for and participate in interviews

Reference Material:

Guffey, Mary Ellen. (2016) Essentials of Business Communication (8th Canadian Edition). Toronto, Ontario: Nelson.

IT in SCM

This course is appropriate for any student interested in using computer applications in an academic, professional, or personal setting. It provides an introduction to word processing, electronic spreadsheet, and database management software for supply chain students.

Course Contents:

1. Word processing software
2. Presentation software
3. Spreadsheet software
4. Improving productivity using IT

Learning Outcomes:

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

1. Demonstrate knowledge of basic system software and application software;
2. Identify and apply the steps involved in analyzing Information Technology (IT) solutions;
3. Make and/or modify files appropriately through the use of office productivity tools: word processor, spreadsheet, presentation, and database.

Reference Material:

Introduction to information technology by V. Rajaraman

Managerial Accounting

This course is an introduction to the fundamental concepts of managerial accounting appropriate for all organizations. Students will study information from the entity's accounting system relevant to decisions made by internal managers, as distinguished from information relevant to users who are external to the company. The emphasis is on the identification and assignment of product costs, operation budgeting and planning, costs control, and management decision making. Topics include product costing methodologies, cost behavior, operational and capital budgeting, and performance evaluation.

Course Contents:

1. Control Systems, Cost Management Concepts and Cost Behavior.
2. Traditional and Activity-Based Cost Management Systems.
3. Organizational Design, Responsibility Centers, and Financial Control.
4. Management Accounting Information for Activity and Process.

5. Pricing, Product Planning and Investment Decisions.
6. Management Accounting and Control Systems for Strategic Purposes.
7. Assessment of Performance over the Entire Value Chain.
8. Motivation of Behavior in Management Accounting and Control Systems.
9. Use of Budgets to Achieve Organizational Objectives.

Learning Outcomes:

On completion of the course students would be able to:

1. Identify the role and scope of financial and managerial accounting and the use of accounting information in the decision making process of managers.
2. Define operation and capital budgeting, and explain its role in planning, control and decision making.
3. Prepare an operating budget, identify its major components, and explain the interrelationships among its various components.

Reference Material:

Introduction to Managerial Accounting, 2nd Edition, Weygandt, Kieso, and Kimmel, John Wiley & Sons, 2001.

Principles of Marketing

This is an overview course with primary focus on marketing products and services to the ultimate consumer. Emphasis is placed on the basic marketing premise that customer needs must be satisfied in order to achieve company objectives. The student gains insight into the complex and interdependent variables involved in developing successful marketing strategies. The strategic marketing planning process is introduced, along with the specific concepts and principals involved in the four key components of the marketing plan - Product, Price, Distribution, and Promotion Strategies.

Course Contents:

1. Marketing and the marketing management process
2. Marketing philosophies and goals
3. Target markets and information gathering
4. Customer behavior
5. Marketing segmentation to targeting
6. Marketing mix elements
7. Consumer and industrial products
8. Product decisions
9. Product life cycles and strategies for new products
10. Pricing factors and strategies

Learning Outcomes:

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

1. Apply the basic principles and tools of marketing.
2. Evaluate market conditions and consumer needs when forming marketing strategies;
3. Describe a range of common strategies for use with each of the various Marketing mix tools: product, pricing, promotion and distribution;

Reference Material:

Principles of Marketing, Kotler & Armstrong (2011) 14th Edition

Business Mathematics/ Numeracy Skills

A wide range of topics is covered in this course although the treatment is limited to the fundamental level. There are solved, partly solved and unsolved assignments with every section, to make the student familiar with the methods introduced.

Course Contents:

Topics covered broadly include review of Basic Algebraic Mathematics, Mathematical Reasoning and Set Theory, Elementary Probability, Displays: Tables Graphs and Charts, Summary Statistics and Measures of Linear Association.

Learning Outcomes:

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

1. Define sets, representation of sets, operations on sets.
2. Natural Numbers, Integers, Rational Numbers, Irrational Numbers, Real Numbers.
3. Need for complex numbers, definition of complex numbers, properties of complex numbers.
4. Definition of a function, types of functions, domain and range of a function, composition of functions, inverse functions
5. Solution of quadratic equations, completing the square and quadratic formula, nature of the roots, equations reducible to quadratic equations
6. Definition of a matrix, types of matrices, operations on matrices, Inverses, solving systems of equations using inverses.

Reference Material:

Introductory Linear Algebra, H.Anton (2000)

Introduction to Procurement Management

Students explore the methods used by organizations to acquire the raw materials, components, supplies, equipment, facilities, and services needed to operate. Topics include strategic procurement, procurement process, competitive bidding and negotiation, procurement and supply management organization, make or buy, price and cost analysis, quality and inventory, supplier selection, supplier development and certification, services procurement, e-Procurement, and involving users and suppliers.

Course Contents:

1. The Challenge of Purchasing and Supply Management in an organization
2. Objectives and Organization for effective Purchasing and Supply Management
3. Procedures and Information Flows
4. Quality Specification and Inspection
5. Supplier Selection and Management
6. Outsourcing, Supplier Relations, and Supply Chain Management
7. Price Determination and Legal Aspects of Purchasing
8. Global Supply Management

Learning Outcomes:

On completion of the course students would be able to:

1. Be able to appreciate the concept of purchasing and procurement
2. Appreciate the role of procurement plays in an organization
3. Understand why procurement is importance
4. Apply procurement theories in workplace and create adding value to the organization

Reference Material:

Purchasing and Supply Chain Management 5th Edition by Robert M. Monczka

Introduction to Sociology

This course introduces the scientific study of human society, culture, and social interactions. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies.

Course Contents:

Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations.

Learning Outcomes:

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

1. Define sociology, its growth, and current role as a scientific discipline.
2. Examine numerous culture and the sociological research applications from other countries.
3. Apply sociological conceptions to analyze social trends exposing mythical or imprecise assumptions

Reference Material:

Little, W., Scaramuzzo, G., Cody-Rydzewski, S., Griffiths, H., Strayer, E., Keirns, N., McGivern, R. (2014). Introduction to Sociology -- 1st Canadian Edition.

Human Resource Management

This course introduces HRM as a fundamental component of the competitiveness, effectiveness, and sustainability of an organization. HRM plays crucial role in predicting employee behavior, attitudes and performance. This course combines two parts of HRM in the company. First, we examine the strategic view on HRM, and understand how strategies of HR are developed and implemented companies. HR strategy determines who is hired, how they are trained, evaluated, compensated and retained. Second, special emphasis is made on HR practices including staff planning, recruitment and selection, induction, remuneration and assessment, and personnel training and development.

Course Contents:

1. What is HRM?
2. Why HRM is important
3. Emerging Human resource management challenges.
4. Trends in HRM
5. Conducting Job analysis.
6. HR Planning
7. Job Description
8. Job Specification
9. Staffing
10. Recruiting and selecting employees
11. Performance appraisals
12. Training and development

Learning Outcomes:

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

1. Recognize and discuss the critical role that effective people management plays in building and maintaining competitive advantage in contemporary organizations.

2. Demonstrate an understanding of basic HR functions, and the theories, concepts, models, and methods that inform HR practice.
3. Apply HRM concepts and technical knowledge to the analysis of HRM problems, cases, and issues.
4. Recognize and demonstrate the behaviors and attitudes required for effective teamwork.

Reference Material:

Managing human resources by Gomez-Mejia, Luis R., David B. Balkin, Robert L. Cardy

Finance of SC Managers

Fundamentals of Finance provide a comprehensive introduction to Supply Chain Managers. The subject links the mathematics of finance and discounted cash flows to finance theory, valuation and investment analysis. Portfolio theory is used to provide a foundation for determining the relationship between risk and return which is, in turn, extended into an analysis of capital structure and methods of estimating the firm's cost of capital. The focus of this subject is on creating shareholder value, with due consideration given to the role of financial management within the broader context of corporate governance.

Course Contents:

1. The Financial Environment: Markets, Institutions, and Interest Rates
2. Time Value of Money
3. Analysis of Financial Statements
4. The Framework of Financial Planning
5. The Basic Concept of Capital Budgeting
6. Working Capital Management
7. Cash and Near-Cash Item Management
8. Accounts Receivable and Inventory

Learning Outcomes:

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

1. Describe financial management in the Federal Government
2. Identify key roles played by various financial management personnel
3. Identify the phases of the federal budget process
4. Describe the role of financial information in performance management
5. Explain basic principles of federal accounting
6. Distinguish federal financial systems from other types of systems
7. Explain the purpose of internal controls and control systems

Reference Material:

Fundamentals of Financial Management, Van Horne and Wachowicz (10th Edition)

Logistics and Distribution

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. This course addresses questions about logistics planning, transport modes selection, vehicle routing, inventory policies, purchasing quantity and timing, and storage selection.

Course Contents:

1. Logistics and the Supply Chain
2. Material flow and information flow
3. Competitive advantage through logistics
4. Logistics strategy
5. Activity Based Costing (ABC)
6. Reverse logistics
7. Distribution and transportation systems standards

Learning Outcomes:

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

1. Understand the structure of supply chains and the different ways through which supply chains can become competitive in the market.
2. Explain how to use the levers of the logistics strategy to redefine the points necessary to make this harmonization.
3. Analyze the importance of the term “value creation” and to propose actions in the field of management of logistics costs towards the creation of value.
4. Distinguish the forces shaping international logistics in a global market.

Reference Material:

Alan Harisson & Remko van Hoek, “Logistics Management and Strategy: Competing Through the Supply Chain”, FT Press, 2011

Martin Christofer. “Logistics & Supply Chain management”, Pearson Education Limited, 2005

Operation Management and Production Management

This course is an introduction to the concepts, principles, problems, and practices of operations management. Emphasis is on managerial processes for effective operations in both goods-producing and service-rendering organization. Topics include operations strategy, process design, capacity planning, facilities location and design, forecasting, production scheduling, inventory control, quality assurance, and project management. The topics are integrated using a systems model of the operations of an organization.

Course Contents:

1. Understand the relationship between OM (operations management) and productivity
2. Explain the importance of and how to develop an operations strategy to achieve a competitive advantage
3. describe how to achieve successful operations in a global environment
4. understand how to manage resources to achieve superior quality through statistical process control
5. understand the methods involved in forecasting demand
6. explain how to design goods and services
7. describe the three major process strategies and capacity planning
8. understand how to develop location strategies
9. review the importance of developing the proper layout strategy
10. understand the methods involved in aggregate scheduling

Learning Outcomes:

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

1. Develop an understanding of and an appreciation for the production and operations management function in any organization.
2. Understand the importance of productivity and competitiveness to both organizations and nations.
3. Understand the importance of an effective production and operations strategy to an organization.
4. Understand the various production and operations design decisions and how they relate to the overall strategies of organizations.
5. Understand the importance of product and service design decisions and its impact other design decisions and operations.
6. Obtain an understanding of quality management practice in organizations and how total quality management and six-sigma facilitate organizational effectiveness.

Reference Material:

David Collier and James Evans. OM, 2nd Edition. Upper Saddle River, NJ: South-Western Cengage Learning, 2010/2011

Self-Management

Effective self-management develops the much needed disciplines that help bridge the gaps between goals and accomplishment. High achievers are people who have learned to effectively manage themselves, tapping on all resources available to motivate themselves toward the fulfilment of their fullest potentials.

Course Contents:

1. Establishing personal vision and goals
2. Identification of your emotional blind spot to reduce conflict and stress
3. Optimizing your health and energy to fulfil your goals
4. Management of time through prioritization
5. Achieving a balance between work, family and rest
6. Managing emotions, and develop empathic atonement to build strong relationships
7. How to consolidate values, strengthen principles, and prioritize your goals
8. Create the necessary disciplines to achieve success

Learning Outcomes:

On completion of the course students would be able to:

1. Develop and exhibit an accurate sense of self
2. Develop and nurture a deep understanding of personal motivation
3. Develop an understanding of and practice personal and professional responsibility
4. Demonstrate knowledge of personal beliefs and values and a commitment to continuing personal reflection and reassessment
5. Learn to balance confidence with humility

Reference Material:

The 7 Habits of Highly Effective People Book by Stephen Covey

Inventory and Warehouse Management

This course deals with all aspects of the inventory and warehouse operation. Participants will be introduced to issues of tracking, handling and managing goods and material that are held in stock. The course will also cover advanced stock control methods, demand planning as a tool for

reduction of obsolescence and redundancy, methods for dealing with variety and proliferation, health and safety and others.

Course Contents:

1. What is Inventory Management
2. Working Capital Cycle
3. Why is Inventory Management important
4. The Financial Implications of Holding Inventory
5. Inventory Carrying Cost
6. Lead time Management
7. When to Place an Order – ROP, JIT
8. Introduction to Warehouse Planning & Systems
9. Warehouse Location & Acquisition Options
10. Warehouse Design
11. Warehouse Layout
12. Materials Handling & Equipment

Learning Outcomes:

On completion of the course students would be able to:

1. Demonstrate the importance of optimum inventory and efficient warehousing management in business.
2. Categorize cargo storage and materials handling systems which provide a good academic and vocational foundation for a career in related fields.
3. Identify inventory and warehousing issues in an integrated logistics flow which reflects sound business practices

Reference Material:

Bowersox, D.J., Closs, D.J., Cooper, M.B., & Bowersox, J.C. (2013). Supply Chain Logistics Management. (4 th ed.), McGraw Hill/Irwin.

Edward, F. (2002). World-Class Warehousing and Material Handling. (International ed.), McGraw-Hill.

Muller, M. (2011). Essentials of Inventory Management. (2 nd ed.), American Management Association.

Project Management

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 Contents:

1. Scope Management
2. Project Constraints
3. Schedule Management Techniques
4. Resource Allocation Methods
5. Project Monitor and Control Methods
6. Cost Management
7. Risk Management
8. Project Charters
9. Project Communication Plans
10. Project Implementation Plans

11. Project Status Reports

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) Fifth Edition by Project Management Institute

SC Analytics and Information System

This course is planned to help students master the analytical tools and techniques within optimization and simulation that are useful in designing and managing supply chains.

Course Contents:

1. Relevance and scope Supply Chain Analytics
2. Recent trends in Supply Chain Analytics
3. Supply chain operations reference model (SCOR)
4. The network KEIRETSU
5. Nature-Inspired Intelligence in Supply Chain Management
6. Recent developments in theory technology and practices
7. Future developments and expected improvement in efficiency levels and operational simplicity

Learning Outcomes:

On completion of the course students would be able to:

1. Explain the importance of supply analytics and applications.
2. Handle the available business information/data more efficiently.
3. Use analytical tools like MS excel efficiently in order to take managerial decisions more effectively

Reference Material:

Stadler Hartmut and Kilger Christoph (2005), "Supply Chain Management and Advanced Planning: Concepts, Models, Software and Case Studies", Third Edition, Springer, ISBN-3-540-22065-8

Tang Christopher S, Teo Chung-Piaw and Wei Kwok-Kee (Eds) (2008), "Supply Chain Analysis: A Handbook on the Interaction of Information, System and Optimization", Springer, ISBN-13: 978-0-387-75239-6

Quality Management and Lean Thinking

Quality Management course provides students with the knowledge and techniques required to improve product quality and process efficiency by identifying and measuring production process variability which, if not successfully addressed, leads to inconsistent product quality, costly wastage, non-standardization and other reliability and productivity problems. This course introduces basic quality management concepts and definitions and builds on that knowledge to explore Statistical Process Control (SPC) based quality improvement techniques as a means to diagnose, reduce and eliminate causes of variation and to assist in process improvement,

production control, production planning and decision-making. A brief review of the fundamentals of statistics and probability and their applications in quality management is provided, and various measurement and control techniques, for example charts for variables and attributes are presented.

Course Contents:

1. Quality basics and history
2. Cost of Quality
3. Introduction, total quality concept
4. Evolution of quality concepts and quality paradigms
5. Organization for total quality, process management
6. TQM implementation and case studies
7. Quality through improvement: Six sigma, lean six sigma, kaizen, 5S, SPC
8. Quality through planning and design: QFD, policy deployment, design for six sigma

Learning Outcomes:

On completion of the course students would be able to:

1. Explain the importance of quality models and identify various quality concepts and frameworks
2. Discover the success elements of Total Quality Management (TQM) deployment
3. Use TQM improvement tools to enhance customer satisfaction and improve processes within their organization
4. Describe various types of benchmarking tools and techniques to boost quality initiatives
5. Apply widely used improvement methodologies

Reference Material:

Integrated Supply Chain Management and Total Quality Management: A New Challenge by Assadej Vanichchinchai & Babara Igel, Dr.

The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer by Jeffrey K. Liker

Statistical Inference and Quantitative Research

The aim of this course is to provide a strong mathematical and conceptual foundation in the methods of statistical inference, with an emphasis on practical aspects of the interpretation and communication of statistically based conclusions in research. Content includes: review of the key concepts of estimation, and construction of Normal-theory confidence intervals; frequentist theory of estimation including hypothesis tests; methods of inference based on likelihood theory, including use of Fisher and observed information and likelihood ratio; Wald & score tests; an introduction to the Bayesian approach to inference; an introduction to distribution-free statistical methods.

Course Contents:

Statistical methods underpin disciplines which draw inference from data and this includes just about everything: for example, the sciences, humanities, technology, education, engineering, government, industry and medicine. Analysis of the complex problems arising in practice requires an understanding of fundamental statistical principles together with knowledge of how to use suitable modelling techniques. Computing using high-level software is also an essential element of modern statistical practice. This course provides you with these skills by giving an introduction to the principles of statistical inference and linear statistical models using the freely available statistical package R.

Learning Outcomes:

On completion of the course students would be able to:

1. Ability to derive the distributional results needed for statistical inference.
2. Ability to conduct appropriate hypothesis tests for comparing two or more means and for regression.
3. Demonstrate understanding that hypothesis tests, regression and analysis of variance can be seen as part of the same statistical theory of linear models.
4. Demonstrate understanding of the theory of maximum likelihood estimation for a scalar parameter.

Reference Material:

J. A. Rice: Mathematical Statistics and Data Analysis, 3rd edition (2007).

D.D. Wackerly, W. Mendelhall and R.L. Scheaffer: Mathematical Statistics with Applications, 7th edition (2008).

Supply Network Planning and Design

Covers all aspects involved in the design of supply chains for companies and organizations anywhere in the world. In the design of physical flows, we show how to formulate and solve Transportation, Transshipment, Facility Location, and Network Design Problems. The course introduces and utilizes key tactics such as risk pooling and inventory placement, integrated planning and collaboration, and information sharing.

Course Contents:

1. Overview of Supply Chain Design: Introduction to Network Flow models.
2. Basic Supply Chain Network Design: Facility Location and Network Design problems.
3. Advanced Supply Chain Network Design: Modeling multiple products, multiple echelons, and multiple time periods.
4. Process & Organizational Design: The design of the supply chain organization itself.
5. Identifying Global Supply Chain Opportunities and Making Strategies
6. Globally dispersed supply and demand and the impact of free trade zones, Free Ports and trading blocs

Learning Outcomes:

On completion of the course students would be able to:

1. Apply knowledge to evaluate and manage an effective supply chain.
2. How to align the management of a supply chain with corporate goals and strategies.
3. Analyze and improve supply chain processes.

Reference Material:

Simchi-Levi, David, Philip Kaminsky, and Edith Simchi-Levi. *Designing and Managing the Supply Chain*. McGraw Hill/Irwin, 2007. ISBN: 9780073341521.

Import-Export Management

International Trade Import & Export is a very dynamic field involving complex sets procedures, a number of commercial, transportation and regulatory documents and a huge number of role players or actors. Practical understanding of the international trade dynamics is important for an individual as well as for a company doing or planning to do business across the borders. This course is designed to cater theoretical concepts and their practical conduct and implementation.

Course Contents:

1. International business practices
2. Customs and policies
3. International Supply Chain Management
4. Marine Insurance
5. Export Import Documentation and Procedures
6. International Trade Barriers
7. Risk management in export and import process.
8. Strategy development for successful export import business
9. How to increase presence in the global market
10. Trade Law

Learning Outcomes:

On completion of the course students would be able to:

1. Understand the export and import process, paying duty, and classifying products
2. Assess your company's readiness to go international, and evaluate your product potential for the export and import markets
3. Identify the major export and import documents required by banks, governments, transportation and insurance companies
4. Understand the obligations of buyers and sellers when using International Commercial Terms
5. Calculate your export and import prices including landed cost
6. Assess payment options including letter of credit and select those most appropriate for your operation
7. Evaluate major insurance coverage's and shipping requirements
8. Assess the value and potential of trade leads for exporting or importing your products

Reference Material:

Mastering Import and Export Management by Thomas Cook

Transportation Management

This course focuses on an overview of the principles and practices of transportation and its role in the distribution process. Emphasis on the physical transportation systems involved in the domestic as well as on global distribution systems.

Course Contents:

1. Transportation and the Economy
2. Transportation Regulation and Public Policy
3. Costing and Pricing for Transportation
4. Motor Carriers
5. Railroads
6. Airlines
7. Water Carriers and Pipelines
8. Transportation Risk Management
9. Global Transportation Planning

Learning Outcomes:

On completion of the course students would be able to:

1. Explain critical thinking strategies within the context domestic transportation management.
2. Explain critical thinking strategies within the context international transportation management
3. Demonstrate understanding of technological factors of logistics in international trade.

4. Solve transportation problems utilizing knowledge of world geography and the transportation system.

Reference Material:

Textbook: "Transportation A Global Supply Chain Perspective" 7th edition by Coyle, Novack, Gibson. ISBN 9780324789195

Supply Chain Modeling and Simulation

This course is an introduction to the problems underlying the design and operation of contemporary supply chains, with a special emphasis on the logistical issues relating to the material and the information flow in these systems.

Course Contents:

1. Supply Chain Management, Integrated Planning, and Models
2. Unified Optimization Methodology for Operational Planning Problem
3. Overview of Descriptive Models
4. Supply Chain Decision Databases
5. Strategic and Tactical Supply Chain Planning
6. Supply Chain Decision Making under Uncertainty
7. Organizational Adaptation to Modeling Systems

Learning Outcomes:

On completion of the course students would be able to:

1. Discuss the ways in which supply management is integrated management and how models can help managers achieve holistic or integrated planning.
2. Explore the ways in which supply chain modeling draws on concepts from many disciplines including strategy formation, logistics, management accounting, demand forecasting, and operations research.
3. Understand the importance of the acquisition and application of analytical IT tools, such as descriptive and optimization models in improving supply chain management.

Reference Material:

Supply chain network modeling, analysis and performance evaluation: using AI tool with industrial case studies by Dr. Rajeshwar S. Kadadevaramath

Modeling, Simulation, and Optimization of Supply Chains: A Continuous Approach by Ciro d'Apice & Simone Göttlich

Research Methods & Techniques

This is a hands-on course designed to impart education in the foundational methods and techniques of academic research in social sciences and business management context. Research scholars would examine and be practically exposed to the main components of a research framework i.e., problem definition, research design, data collection, ethical issues in research, report writing, and presentation. Once equipped with this knowledge, participants would be well-placed to conduct disciplined research under supervision in an area of their choosing. In addition to their application in an academic setting, many of the methodologies discussed in this course would be similar to those deployed in professional research environments.

Course Contents:

1. Data and the Nature of Measurement
2. Statistical Analysis of Data
3. Field Research: Naturalistic Observation,

4. Case-Study Research, and Survey Research
5. Correlation and Differential Methods of Research
6. Hypothesis Testing, Validity, and Threats to Validity
7. Control of Variance through Experimental
8. Design – Single-Variable and Independent-Group Designs
9. Control Variance through Experimental Design:
10. Single-Variable, Correlated-Groups Designs
11. Field Research: Second Look at Research in Natural Settings

Learning Outcomes:

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

1. Identify diverse research methods and their theoretical underpinnings.
2. Demonstrate an ability to identify, analyze and synthesize literature related to a research question.
3. Critically analyze and validate an ability to frame viable research questions.
4. Demonstrate an understanding and ability to undertake the range of tasks necessary to completing a research project.

Reference Material:

Bryman, Alan & Bell, Emma (2011). Business Research Methods (Third Edition), Oxford University Press.

Innovations in SC with Ecommerce

The intersection of supply chain management and e-business information systems is a significant topic for the modern business world as understanding which technologies will most effectively enable innovative practices is a key management competency. Every product that we use today is the result of a supply chain - a complex series of steps that turn raw materials into the final products we use and everything related with this. Managing these supply chains has become more and more a challenge, especially with all modern technologies and todays trends. The 24-hour economy, fast delivery of goods to your home, wanting to have customized products and of course the focus on sustainability are a few of these trends.

Course Contents:

1. Buyer-supplier coordination in e-markets
2. Collecting consumer behavior data with WLAN
3. Comparisons of IT in supply chains
4. Cooperative pricing in manufacturer-e-retailer supply chain
5. Cost estimation in capacitated environments
6. E-network integration for synchronizing supply chains
7. RFID in supply chains
8. E-Tailing
9. Ecommerce and Supply Chain Networks

Learning Outcomes:

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

1. Describe the key trends in supply chain innovation.
2. Discuss the impact of innovative information and communication technology in a clear and substantiate way.
3. Reflect on supply chain innovation in different application areas, as for example logistic service providers and construction industry.

Reference Material:

Innovations in Supply Chain Management for Information Systems: Novel Approaches by John Wang

Supply Chain Performance Measurement

Corporations often struggle with a lack of alignment between financial goals and operational metrics. Additionally, today's information technology often overwhelms management with data and metrics. Learn how to synchronize supply chain and logistics metrics with key company financial metrics and goals.

Course Contents:

1. Measuring corporate performance
2. Managing corporate performance
3. Exercises to illustrate how to design a supply chain and logistics services performance dashboard
4. Discussions on technology issues: applications for building dashboards, mobile reporting and big data analytics
5. Results-Oriented Work Environments (ROWE)
6. Performance-based incentives and human talent evaluation
7. Managing performance of business partners

Learning Outcomes:

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

1. Develop your competencies so you can increase your proficiency in management of data and metrics.
2. Have your company's performance dashboards (KPIs) critiqued, and immediately put the methods learned in the course to use in the corporate environment.
3. Design a performance measurement architecture using its three dimensions: types of measures, measuring context, and stakeholders' perspectives.

Reference Material:

Supply Chain Performance Measurement :- a tool for achieving excellence by Shraddha Gawankar & Sachin Kamble

Supply Chain Risk Management

The following concepts/tools will be reviewed during the course: Risk analysis, risk management, and security in supply chains, Brief review of statistics and probability theory, Failure models, Qualitative and quantitative tools for risk management, Discrete Event Simulation and Agent-based Modeling, Applications of simulation / mathematical / risk management tools in supply chains, Risk-based criteria for selection of suppliers / outsourcing of decision-making, International trade, trade financing, risk management, and compliance management, Application of risk management tools in postal distribution networks and international trade & Digital ecosystems for risk management, resilience and automation.

Course Contents:

1. Basics of risk management
2. Assessing risk
3. ERM framework
4. Risk organizational structures
5. Governance, risk and compliance
6. Controlling risk

7. Risk and supply chain management

Learning Outcomes:

On completion of the course students would be able to:

1. Apply a detailed understanding of supply chain activities
2. Identify, analyze and assess supply chain risk
3. Understand the keys characteristics in reducing risk
4. Use risk management tools and methods
5. Make supply chain organizational improvements

Reference Material:

Handfield, Robert and McCormack, Kevin "Supply Chain Risk Management" Auerbach Publication (Taylor & Francis Group), 2008

Legal Aspects of Supply Chains

This course is intended to give those in supply management a comprehensive look at various aspects of contract law and their application to the supply management function as well as what happens after a contract has been formed – each party's respective responsibilities for performance of the contract and rights to legal remedies in the event of non-performance.

Course Contents:

1. Sources of Law
2. Contract Formation
3. Unenforceable Contracts
4. Contract Performance
5. Warranties and Product Liability
6. Remedies
7. Law of Agency
8. Other Laws Affecting Purchasing

Learning Outcomes:

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

1. Apply basic requirements of contract formation and
2. Recognize rights and responsibilities of each party to a contract
3. Identify issues relating to exercise of contracting authority and the lack thereof

Reference Material:

Legal Aspects of Purchasing and Supply Chain Management by Ian Longdin

The Role of Legal Compliance in Sustainable Supply Chains, Operations, and Marketing by John D. Wood

Green Supply Chain Management

Green Supply Chain Management (GSCM) is seen as a modern concept of management practices attempting to integrate environmental concerns to all stages up and down the supply chain. In a globalized market, the environmental performance criteria extends beyond the single firm to its entire supply chain network across national borders.

Course Contents:

1. What Is Supply Chain Sustainability?
2. Upstream (Purchasing) Issues
3. Downstream (Marketing and Distribution) Issues

4. Sustainable Transportation

Learning Outcomes:

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

1. Discuss the functional breadth and topical scope of supply chain sustainability;
2. Evaluate supply chain sustainability tools and metrics that would work for their organization.
3. Explain the role of marketing in supporting supply chain sustainability.
4. Explain how sustainability reporting and social responsibility reporting can be used to support supply chain sustainability.
5. Discuss how transportation affects supply chain sustainability, and how inter-organizational relationships can help increase transportation sustainability.
6. Outline the possible trade-offs between sustainability, safety, and efficiency.

Reference Material:

Green Supply Chain Management: A Concise Introduction 1st Edition by Joseph Sarkis

Globalization and Outsourcing Strategies

The course will offer a broad perspective of various issues relating to the outsourcing of strategic IT and business services in a global context. In this regard the key goal of this module are (i) to assess the role that sourcing plays in shaping business and IT strategy in a global context, (ii) how to make sourcing decisions and engage in outsourcing initiatives, and (iii) how to manage outsourcing to achieve superior performance. The course will examine in depth both sides of the equation: client and supplier perspectives, and will discuss the role of intermediaries.

Course Contents:

1. Overview of the global sourcing marketplace
2. Sourcing models and sourcing decisions
3. Country attractiveness for sourcing
4. Supplier configurations and supplier selection strategy
5. The outsourcing lifecycle, transition phase and governance
6. Leveraging knowledge from external sources: crowdsourcing for innovation
7. Innovation in outsourcing
8. Robotic Process Automation and Cognitive Automation
9. Cross-cultural and social issues

Learning Outcomes:

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

1. Relate to and analyze full outsourcing lifecycle
2. Demonstrate hands-on experience in managing supplier(s)
3. Apply theoretical models and frameworks to analyze various sourcing scenarios.

Reference Material:

Sustainable Global Outsourcing: Achieving Social and Environmental Responsibility in Global IT and Business Process Outsourcing (Technology, Work and Globalization) by Ron Babin and Brian Nicholson

Course textbook: Oshri, I., Kotlarsky, J. and L.P. Willcocks (2015) "The Handbook of Global Outsourcing and Offshoring", 3rd edition, Palgrave Macmillan, London.

Foreign Language (Chinese)

Introduction to modern standard Chinese, commonly called Mandarin. It is the official language of Mainland China and Taiwan, and one of the official languages of Singapore. The course presumes no prior background in the language. Course objectives are to master Chinese language

pronunciation, including the recognition and writing of Pinyin Romanization, basic reading and writing skills (around 150 characters in the traditional character set or the simplified set), and to develop the ability to participate in simple, practical conversations on everyday topics. The relationship between Chinese language and culture and the sociolinguistically appropriate use of language will be stressed throughout.

Course Contents:

The Chinese Reading and Writing Lesson mainly teaches students Chinese expressions, grammar, and passage-reading skills, focusing on improving students' ability to read and write. The course aims to enlarge students' Chinese vocabulary and improve their writing ability through detailed interpretation and plenty of exercise on key words, grammar, sentence patterns, reading comprehension, and essay writing.

The Chinese Listening and Speaking Lesson mainly teaches students communicative situations and topics in Chinese people's everyday lives, and the course introduces useful words and expressions in oral Chinese.

Learning Outcomes:

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

1. Obtain a critical understanding of the linguistic landscape of Chinese speaking countries and regions and ways in which social and cultural specifications are represented through Chinese and Chinese speaking people
2. Locate, evaluate and apply characters/words/linking phrases learned to construct simple sentences and texts to express oneself
3. Locate, evaluate and apply the linguistic knowledge learned to handle general courtesy in Mandarin, answer predictable questions, and introduce oneself and one's familiar environment in Mandarin
4. Gain the ability to be a critical and self-reflective learner, and to sustain intellectual curiosity about Chinese language, society and culture

Reference Material:

Modern Chinese 1A (2nd edition), Textbook, CA: Better Chinese LLC, 2013.

Gao, Mobo C.F., Mandarin Chinese: An Introduction, Melbourne: Oxford University Press

ELECTIVES

Entrepreneurship in Supply Chain

This course introduces students to the theory of entrepreneurship and its practical implementation. It focuses on different stages related to the entrepreneurial process, including business model innovation, monetization, small business management as well as strategies that improve performance of new business ventures. Centered on a mixture of theoretical exploration as well as case studies of real-world examples and guest lectures, students will develop an understanding of successes, opportunities and risks of entrepreneurship. Students will also develop skills in written business communication and oral presentations that allow students to integrate entrepreneurship concepts and interact with business experts.

Course Contents:

1. Entrepreneurial Thinking
2. Innovation Management
3. Opportunity Spotting
4. Opportunity Evaluation
5. Industry and Market Research
6. Strategy and Business Models

7. Financial Forecasting
8. Business Plans
9. Entrepreneurial Finance
10. New Venture Creation

Learning Outcomes:

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

1. Understand the context, concepts, theories and process of entrepreneurship
2. Develop entrepreneurial opportunities & recognize the entrepreneurial potential within yourself, whether you want to start your own business or act as an entrepreneur within an existing organization
3. Identify entrepreneurial opportunities and assess these opportunities
4. Research and determine the viability or feasibility of new business concepts

Reference Material:

Timmons, J. A., Gillin, L. M., Burshtein, S. L., & Spinelli, S. (2011). New venture creation. Entrepreneurship for the 21st century - A Pacific Rim perspective.

Osterwalder, A. & Pigneur, Y. (2010). Business model generation. Wiley

Management and Leadership

This course commences by identifying your leadership development priorities and then continues with a framework that systematically works towards realizing your managerial and leadership potential. The course follows a T-shaped design, covering a broad range of leadership concepts, giving you the opportunity to dive-deeper and refine the concepts that fit your leadership development needs. We will also discuss some of the common pitfalls and rookie errors that managers and leaders make, helping you to develop strategies that avoid these mistakes.

Course Contents:

1. Introduction to Leadership and Leadership Effectiveness
2. The Nature of Management
3. Managerial Traits and Skills
4. Basic Leadership Skills
5. Ethical Leadership

Learning Outcomes:

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

1. Understand the skills required to supervise and manage a team
2. Manage your team's performance effectively by giving appropriate, constructive feedback
3. Adapt your natural leadership style to achieve results from each team member
4. Communicate effectively, whatever the situation
5. Improve performance via coaching and delegation

Reference Material:

The 7 Habits of Highly Effective People by Stephen Covey

Leadership Handbook of Management and Administration by James D. Berkley

Organizational Management and Leadership by Anita Satterlee

Humanitarian Logistics

The global demand for humanitarian assistance, including requests for assistance by national governments, continues to rise. This is triggered and sustained by increased severity of natural hazards, escalating conflict, and a dramatic increase in vulnerabilities caused by the global financial crisis, continuing high food prices, the scarcity of energy and

water, population growth and urbanization. This comprehensive course focuses on pre-disaster preparation rather than post-disaster assistance; it provides current thinking as well as best practice for those who need to understand the many challenges and the ways to respond effectively.

Course Contents:

1. Risky Business: What Humanitarians Can Learn From Business Logisticians – And Vice Versa?
2. Impacts of Funding Systems on Humanitarian Operations
3. Humanitarian Logistics Metrics: Where We Are and How We Might Improve
4. Humanitarian Logistics and The Cluster Approach: Global Shifts And The Us Perspective
5. Humanitarian Supply Network Management
6. Humanitarian Logistics: A Cultural Perspective
7. Combining Humanitarian Logistics And Military Supply Chain Capabilities

Learning Outcomes:

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

1. Examines the challenges facing those whose role it is to organize and distribute resources in difficult situations.
2. Gain an understanding of the key issues including warehousing, procurement, and funding.
3. Discuss the humanitarian supply network management and understand how to respond to disasters in a rapid and coordinated manner.
4. Choose and adapt best options in challenging and moving complex contexts
5. Analyze and critically review supply chain strategies for responding to domestic disasters

Reference Material:

Managing Humanitarian Logistics (Springer Proceedings in Business and Economics) by B.S. Sahay

Humanitarian Logistics and Sustainability by Matthias Klumpp

Humanitarian Logistics: Meeting the Challenge of Preparing for and Responding to Disasters by Martin Christopher & Peter Tatham

ERP and SCM Systems

The course is intended to explain how the fundamental business processes interact within an ERP system in the functional areas of sales and distribution, materials management, production planning, financial accounting, controlling, and human resource management.

Course Contents:

1. The Enterprise
2. Introduction to ERP
3. Basic ERP Concepts
4. ERP and Related Technologies
5. Business Intelligence
6. E-Business and E-Commerce
7. Business Process Reengineering (BPR)
8. Implementation Challenges
9. ERP Transition Strategies
10. ERP Implementation Life Cycle
11. Pre-implementation Tasks—Getting Ready
12. Requirements Definition
13. Implementation Methodologies

Learning Outcomes:

On completion of the course students would be able to:

1. Demonstrate a good understanding of basic issues in Enterprise Systems,
2. Explain the scope of common Enterprise Systems (e.g., MM, SCM, CRM, HRM, procurement),
3. Explain the challenges associated with implementing enterprise systems and their impacts on organizations
4. Describe the selection, acquisition and implementation of enterprise systems

Reference Material:

Enterprise Systems for Management, Luvai F. Motiwala and Jeff Thompson, second edition, Published by PEARSON: ISBN-13: 978-0-13-214576-3.

Defense Supply Chain

Current and future military needs require our forces to have a more efficient supply chain and logistics. The supply chain must be flexible and able to be deployed quickly to meet these needs. Enhanced logistics processes can help the Department of Defense (DoD) produce more combat capability. Successful implementation of this change is essential, and will have far-reaching impact on the people, business processes and technology infrastructure. This course presents the key supply chain principles and implementation strategies compiled into a structured and workable approach for achieving progress toward fully incorporating supply chain management into the DoD supply chain and logistics process.

Course Contents:

1. Basic principles of DoD Supply Chain
2. Supply Network Management in Defense and the Commercial Environment
3. Cost Estimation and Planning
4. Defense Simulation and Modelling
5. Logistic Modelling
6. Defense Capability Management
7. Weapon System Performance Assessment

Learning Outcomes:

On completion of the course students would be able to:

1. Demonstrate a thorough understanding of the methods, techniques and tools for modelling defense problems and systems;
2. Be able to critically assess a range of approaches and methods to help support defense supply chain and logistics decision making.

Reference Material:

Military supply chain management: Build like a Pro by Gerard Blokdyk

Defense Logistics: Enabling and Sustaining Successful Military Operations 1st Edition by Jeremy Smith

Operational Logistics: The Art and Science of Sustaining Military Operations by Moshe Kress

Contemporary Issues in Supply Chain Management

The course puts a strong emphasis on modern theories and practices within the field of study, and investigates the best way to achieve the twin goals of cost reduction and service enhancement in supply chain networks designed either for commercial industrial sectors, government organizations and not-for-profit organizations, or for military purposes and disaster relief management. Additionally, the course examines the functionality and the strategic direction of supply chain management, focusing on evolving issues in technology such as radio frequency

identification (RFID) and on the current theoretical developments within other areas including risk management.

Course Contents:

1. Reverse and environmental supply chains
2. Humanitarian supply chains and disaster relief management
3. Innovation and defense
4. Service industry supply chains
5. Managing risk in supply chains.
6. Radio frequency identification (RFID) and internet platforms

Learning Outcomes:

On completion of the course students would be able to:

1. Apply information communications technology to logistics and supply chain management, improving an organization's competitive performance, effectiveness, productivity and value added
2. Gather, analyze and evaluate information from a wide range of sources, recognize areas of concern and recommend viable solutions
3. Evaluate research and advanced scholarship methodologies, and argue alternative approaches
4. Understand the motivation and constraints held by colleagues and partners in seeking to integrate processes across supply chain networks

Reference Material:

Contemporary issues in operations and supply chain management by Mkansi M & McLennan N
Contemporary Issues in Supply Chain Management and Logistics Anthony M. Pagano Mellissa Gyimah

Customer and Supplier relationship management

This course covers subset of Supply Chain philosophy, and presents theoretical discussions on Supplier Relationship Management, CRM and its benefits, as well as practical case studies that provide evidence of such benefits.

Course Contents:

1. Strategic Partnering
2. Portfolio Management
3. Business Transition Management
4. Powerful Communications
5. SRM
6. CRM
7. Aligning Supplier And Customers

Learning Outcomes:

On completion of the course students would be able to:

1. analyze relationship theory and relationship economics from the point of view of the customer and the organization
2. Discuss the benefits of being a supplier focused organization and examine the rules required for becoming an attractive customer.
3. Identify the role and importance of the purchasing and supply function in the value chain
4. Define SRM and discuss its benefits, and apply practical case studies that provide evidence of such benefits.

Reference Material:

Customer Relationship Management by Ed Peelen and Rob Beltman
Supplier Relationship Management by Jonathan O'Brien

Demand Forecasting

In a modern, lean supply chain, accurate forecasts are critical to achieving supply chain success. Today, there is greater realization for the value and need for competency in managing demand. Understanding of the forecasting process and requirements for an accurate forecast are a necessity for any executive involved in the demand forecasting process. This course will highlight in detail the principles of demand management, forecasting, and the relationship between forecasting and planning. The course demonstrates how effective demand management contributes to sales revenue growth and also describes in detail the models and techniques that can be followed to ensure an accurate forecast and a sustainable outcome.

Course Contents:

1. Stocks and Inventories
2. The Role of Forecasting in Managing the Supply Chain
3. Demand Management
4. Developing and Managing the Forecasting Process
5. Collaborative Planning
6. Forecast Model Selection and Management
7. Calculating Safety Stock Levels
8. Measuring Forecast Accuracy

Learning Outcomes:

On completion of the course students would be able to:

1. Be able to apply simple tools and methods to produce more accurate and reliable demand plans
2. Be able to increase communication and integration of planning teams
3. Be able to Perceive the significance of the various statistical models and techniques used to prepare accurate demand forecasts

Reference Material:

Wallace, Thomas, F., and Stahl, Robert, A., Sales & Operations Planning - The How-To- Handbook, 3rd Edition, T. F. Wallace & Company, 2008

Vollman, Thomas E., Berry, William, L., Whybark, Clay, D., and Jacobs, Robert, F., Manufacturing Planning and Control Systems for Supply Chain Management, 5th Edition, McGraw Hill, 2005

Business process Reengineering

This course deals with different concepts, approaches and applications for business process re-engineering. It illustrates how to take giant strides to attain market dominance in a dynamic business world. The course shows how automation of re-engineered processes can increase competitive advantage for a firm. Using several case studies, the course also shows how different companies have streamlined their processes, reduced their cost of operations, have created cross functional process excellence to increase value proposition to all stakeholders.

Course Contents:

1. Introduction to BPR
2. BPR Life Cycle Methodology The BPR Lifecycle Methodology
3. BPR and KPIs
4. Role of IT in BPR – Hands On IT and BPR, Enterprise Architectures, BPM and BPR supportive Systems, Case Studies

5. BPR, Model and Simulation
6. Business Models & Innovation for BPR
7. Change Management & BPR

Learning Outcomes:

On completion of the course students would be able to:

1. Apply contemporary concepts and methodologies to improve business performance and operational capabilities
2. Explain and apply Six Sigma and Lean process methodologies, supporting tools and techniques to an identified workplace problem.
3. Demonstrate excellent communication skills and a collaborative approach to work.
4. Identify opportunities for business improvement and diagnose the need for change.

Reference Material:

Graham R. Sturdy, Business Process Reengineering: Strategies for Occupational Health and Safety, 1st Edition, Cambridge Scholars Publishing

Contract Management

This course covers the necessity of acquiring and managing resources on a project to ensure its success. A critical component is obtaining the appropriate goods and services from external and internal vendors. Students will learn the process of acquiring external resources through suppliers and the legal requirements associated with contracts, and study the best practices regarding contract management and purchasing within a project management environment.

Course Contents

1. Introduction to contract management
2. Specification writing
3. Contracts and Service Level Agreements
4. Negotiation skills
5. Financial appraisal of contractors
6. Exiting, changing and migrating contracts
7. Managing contracts
8. Partnership models and continuous improvement

Learning Outcomes:

On completion of the course students would be able to:

1. Understand the total process of managing contracts
2. Exploit opportunities to extract even more added value
3. Develop appropriate relationships with contractors
4. Understand and use a range of contracting strategies and options
5. Measure and improve contract performance
6. Understand the impact of legislation on contract performance

Reference Material:

Contract Management: Core Business Competence by Peter Sammons
Practical Contract Management by Alan Oxenbury, Ray Carter, and S. K. Kirby

Health Safety Environment (HSE) in Warehouse

Many facilities and health and safety managers will be responsible for the management of warehouses or other large storage buildings. They pose particular risks that need to be understood, and employees and visitors must be protected accordingly. This course covers the aspects HSE and its certification specifically for warehouse workspace.

Course content:

1. Objectives for work with Health, Safety and Environment (HSE).
2. Regulations and guidelines concerning HSE-work
3. Systematic HSE work
4. Reporting of HSE problems and discrepancies
5. Risk Assessment
6. Emergency preparedness: what are you going to do and who to notify when something happens?
7. Fire protection-theory and practical exercises using fire extinguishing equipment.
8. First aid-theory and practical exercises in heart-lung resuscitation and the use of heart starter.

Learning Outcomes:

On completion of the course students would be able to:

1. Explain the origins, extent and impacts of OHS problems including competing theoretical models of injury and illness at work and how these problems can best be addressed.
2. Identify and assess human and social costs of OHS (including environmental costs) and the need to devise healthier and more sustainable work organization.

Reference Material:

Health and Safety in Logistics: Assessing and Avoiding Risk in Warehousing and Transportation by Jerry Rudd

Shipping, Freights and Port Operations

Shipping and port management falls in the department of logistics, wherein the person in charge ensures that the goods are delivered and received with minimum hassles. In addition, the running of the entire port and the ships that depend on it also falls under this department. So, you can see that a degree in shipping and port management will enable the candidate to work both in the sea and the land. It will be his or her responsibility as soon as the ship down her anchor. And with the bulk of trade going the sea route the demand for efficient and skillful managers with knowledge of shipping and port is on an all-time high. Those who wish challenge and thrill every day of their work life should definitely go for this course, and they won't be disappointed either. Given below are more information for students who wish to pursue a course in shipping and port management.

Course Contents:

1. Logistic & Forwarding
2. Ship Operations
3. Marine Survey
4. Marine Insurance
5. Marine Cargo Operation
6. Marine Safety
7. Shipping Economic
8. Marine Law & Convention
9. Terminal Operation & Port Management
10. Containerization
11. Law of The Sea
12. Ship Broker & Charter

Learning Outcomes:

On completion of the course students would be able to:

1. Plan, organize and control the port, terminal, depots etc.
2. Manage shipping and shipping ancillary business
3. Execute strategic maritime decision
4. Design transportation routes and logistics
5. Manage supply chain and logistics activities in different companies

Reference Material:

Maritime Logistics: A Complete Guide to Effective Shipping and Port Management by Dong-Wook Song & Photis M. Panayides

Master Planning of Resources in SCM

Application of industrial manufacturing theory and practice to the area of operations management and production planning/control. Topics Include: Introduction, manufacturing planning and control system (MPC), Just-in-time/Lean production, Value Stream Mapping, reflection of economic, social, and environmental consequences of planning decisions (sustainability), demand management, forecasting, inventory control, master production scheduling, final assembly scheduling, capacity theory, rough-cut capacity planning, material requirements planning (MRP), capacity requirements planning (CRP), manufacturing resource planning (MRP II), production activity control, scheduling, bottleneck scheduling, theory of constraints (OPT), distribution planning, sales- and operations planning.

Course Contents:

1. Introduction to Master
2. Planning of Resources
3. Business Planning Hierarchy & Demand Management.
4. Manufacturing Planning and Control Processes
5. Manufacturing Environment and Processes
6. Extrinsic and Intrinsic Forecasting
7. Sales and Operations Planning (S&OP)
8. Trade Offs Volumes V/s varieties
9. Production leveling v/s Chase strategies
10. Master Scheduling, Master Production scheduling (MPS)
11. Bill of Materials (BOM), Typical, Engineering Control Board.
12. Distribution planning, DRP and Network planning.
13. Transportation- Re Order Point, Time phased Ordering point and Fair share allocation systems

Learning Outcomes:

On completion of the course students would be able to:

1. Understand the process used to develop and validate S & OP plan.
2. Understand how to manage the issues in master scheduling and
3. Final assembly scheduling.
4. Understanding the various manufacturing techniques and processes.

Reference Material:

Master planning of Resources, Study Notes for APICS CPIM by Brian Willcox for 2013. APICS (The Association for Operations Management, USA)

Introduction to Materials Management – Sixth Edition- J.R.Tony Arnold, Stephen N.Chapman,Lloyd M.Clive. Pearson, Prentice Hall, NJ, Ohio- USA.

Manufacturing Planning and Control for SCM- Fifth Edition - Vollman, Berry,Whybark,Jacobs.Mc Graw Hill , International Edition.

SOP FOR OUTBOUND EXCHANGE STUDENTS OF HEILONGJIANG INTERNATIONAL UNIVERSITY (HIU)

1. Based on the maximum provision of students to be sent in an academic year, as permitted by HIU, there shall be students selected from each campus of Bahria University including, Islamabad, Karachi & Lahore, to go on the exchange program to HIU. In case suitable candidate(s) are not available in a campus, the seat may be transferred to the other campus.
2. 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

3. 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:

- a. The students must be a regular student of Bahria University taking full course load.
- b. The minimum CGPA of the student should be 3.0.
- c. The student must have studied for more than a year (2 semesters) with Bahria University. Students in 2nd semester will be eligible to apply.
- d. The student must be proficient in English and have good communication skills.
- e. The student must not have any disciplinary cases against them and should be void of any attitude problem.
4. The shortlisted students will be re-evaluated by a following member committee at Bahria University to shortlist students for final approval of Rector:

a. Pro-Rector	-	Chairperson
b. Registrar	-	Member
c. Director Academic Affairs	-	Member
d. Director Admissions	-	Member
e. Director Examinations	-	Member
f. Director Students Affairs	-	Member
g. Director International Office	-	Member
5. 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.
6. The responsibility of accommodation arrangement in China, 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 HIU will assign against the applicant.

7. The student will defer their semester prior going to HIU, 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 HIU under exchange program. The student must adhere to departure and return dates as specified by his/her department.
8. The duration of the semester(s) studied abroad will not be counted towards the calculation of time bar.

Eligibility for Honors & Awards:

- a. Students availing the exchange programme at the HIU 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.
 - b. 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.
9. If during the summer session,
 - a. the students take shortfall courses, they will be awarded actual grades and no capping will apply.
 - b. 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:

10. Student interested in registering for the courses at HIU 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.
11. The student must inform their Head of Department about the possible courses they wish to take at HIU 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.
12. 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:

- a. Students applying for **credits transfer** are to submit original interim transcript and the course outlines of the course(s) studied at HIU 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 for final approval to Director International Office. There shall be no fee charged from the student for **credits transfer**.
- b. **Credits transfer** of courses will only be allowed for Degree level programs (*equivalent to similar level program at Bahria University*) offered on campus.

- c. **Credits transfer** for only those courses will be allowed for which a course with similar standard, credit hours and matching description is available in the relevant academic program of Bahria University. As the marking criteria at HIU is slightly different from what is followed at Bahria University, therefore following grade mapping mechanism is to be followed:

Heilongjiang Intl. University			Bahria University	
Grade (In Chinese)	Grade (In English)	Marks	Grade	GP
优秀	Excellent	90-100	A	4.00
良好	Good	80-89	A-	3.67
中等	Medium	75-79	B+	3.33
中等	Medium	70-74	B	3.00
及格	Qualified	65-69	C+	2.33
及格	Qualified	60-64	C-	1.67
不及格	Fail	Below 60	F	0.00

**Due to lesser number of grades at HIU, Grade B-. C, D+, D of BU have been excluded because of their incompatibility with Grade Point equivalent of HIU Grades*

13. The courses must equate in description and laboratory work, if any, with the similar course of the relevant academic program of Bahria University.
14. **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 HEILONGJIANG INTERNATIONAL UNIVERSITY (HIU)

1. Bahria University will accept students from HIU 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.
2. Only students recommended by the International office of HIU will be entertained under this arrangement.
3. The inbound students from HIU 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.
4. The student will be responsible for own accommodation arrangement in Pakistan, but the International office of BU will assist in finding suitable accommodation.
5. There shall be no fee charged by Bahria University from students of HIU under student's Exchange program.
6. On successful completion of the course work at Bahria University, the student will be responsible to meet the **credits transfer** requirements of HIU 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.