

COURSE HANDOUTS AND GUIDELINES
FOR
FIRST DEGREE THESIS
(Course Number : BITS F421T/BITS F422T/BITS F423T/BITS F424T)

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ACADEMIC UNDERGRADUATE STUDIES DIVISION
BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
K K BIRLA GOA CAMPUS

CALENDAR OF EVENTS

1. THESIS COURSE

I Sem	II Sem	Item	From	To
SEP 14	JAN 22	TS- 1 Form	Student	AUGSD
SEP 24	JAN 29	Detailed outline of work	Student	Supervisor
OCT 04	FEB 10	Viva – I	Student	Supervisor
OCT 24	MAR 15	Mid. Semester written report and presentation	Student	Supervisor
NOV 06	MAR 15	Mid. Semester Grade	Supervisor	AUGSD
NOV 29	APR 15	Viva- II	Student	Supervisor
DEC 15	APR 30	Thesis abstract (2 copies)	Student	Supervisor
DEC 15	APR 30	Final thesis report submission (1copy)	Student	Supervisor
DEC 19-25	May3-10	Final Viva	Student	Examiner
DEC 19-25	May 3-10	Final Thesis Report, Final Evaluation Form, Thesis Abstract and Attendance sheet (1 copy each)	Supervisor	AUGSD

N.B. if any of the above date happens to be a Sunday or a holiday, the immediate next date will be the calendar date. FINAL THESIS REPORT should invariably be submitted on or before the above-mentioned date.

**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
K K BIRLA GOA CAMPUS
AUGSD DIVISION**

**FIRST/ SECOND SEMESTER
COURSE HANDOUT: BITS F421T/ F422T THESIS**

1. SCOPE AND OBJECTIVE OF THE COURSE

The aim of the thesis course is to train a student in the methodology of research, to cultivate a logical and creative thinking and to make them express their findings in the form of a scientific report. It also gives an opportunity to the student to comprehend his/her subject knowledge and apply it to the given problem.

2. OPERATION OF THE COURSE

- a) The student should immediately chalk out a plan of work in consultation with his supervisor. The objectives and expected rate of progress will be spelt out by the supervisor. Literature survey should be carried out to ascertain the current state of work in the proposed area of thesis. The detailed out- line of the work must include a time schedule with clearly indicating the intermediate milestones and the estimated time to reach the same.
- b) Within Two weeks of registration, the student should give his/her thesis particulars to the AUGSD Division in TS-1 Performa.
- c) Two typed/ word processed copies of final thesis are to be submitted to the supervisor on or before the last day of class work in the semester.
- d) ONE typed /copy of Thesis Abstract should be submitted to the AUGSD Division through the supervisor along with the Final Report. The ABSTRACT should also be a part of the **Bound Report** in the same format. The format is given below.

Format for submission of Thesis Abstract

Thesis Title :

Supervisor :

Semester : First/ second Year

Name of the student : ID No.

Abstract

- e) Separate thesis topic has to be assigned to an individual student. Wherever the broad area is same, the aspects to be researched by an individual candidate should be clearly focused and spelt out
- f) Utmost care should be taken in the preparation of the Final Report. A check – list of various items is provided and students should carefully go through these. Supervisors are also required to examine the draft of the FINAL REPORT keeping in view the items in the check-list. Title of the thesis should be proper and should be indicative of the type of work done.

3 EVALUATION

Evaluation in this course is essentially individual oriented. The various components of evaluation along with the weightage of each component and the due day/week are given below:

Component	weightage	week in which due
Viva – I	15	5 th week
Mid - sem. Written report	15	10 th week
Mid - sem. Presentation	15	10 th week
Viva – II	15	15 th week
Final thesis*	25	Last day of class work
Final viva-voce*	15	First week of December (for 1 st semester) and first week of May (for 2 nd semester)

*** Final Thesis and Final viva are to be jointly evaluated by the supervisor and the examiner appointed by the supervisor.**

The evaluation will recognize the day-to –day work involvement and punctuality of the student in the thesis work. Evaluation in various components shall take into account work progress and achievements, technical/professional competence, documentation and expression, initiative and originality, punctuality and reliability, self-reliance, and acquisition of special skills.

The student should extend full cooperation to his/her supervisor and interact with him/her in-advance about the time, venue and mode of each evaluation .They should regularly meet the supervisor and present their work periodically. Proposed examiners may also be invited to attend mid semester presentation and viva session.

4. GRADING PROCEDURE

Grading will be done mainly on the basis of the progress made towards attaining the overall objectives of the Thesis. The supervisor shall evaluate various prescribed components of evaluation before the submission of final thesis.

The final thesis and performance in the final viva are to be jointly evaluated by the panel consisting of supervisor and examiner appointed by the supervisor. Supervisor should make the Final thesis report available to the examiner well in advance, before sending he should check the contents of the report. Evaluation in various components can be done on the basis of marks or grades.

However, the recommendations for the final award shall invariably be made in terms of one of the following prescribed letter grades, given in table along with corresponding grade points. The thesis carries **16 credit units** for the nominal duration of 1 semester, during which students will NOT be permitted to do other coursework.

Letter Grade	A	A-	B	B-	C	C-	D	E
Grade Point attached (on a scale of 10)	10	9	8	7	6	5	4	2

The students will have to defend the work appearing in his /her thesis before the panel of examiners. Detailed outline of work and the mid semester written report submitted by the student should be made available by the supervisor to the examiner. Before giving recommendations for the final grade in the thesis, the examiners will evaluate the candidates as indicated through the various reports (mid-semester & final thesis) and performance in the viva, shall guide the recommendations for the final award.

Immediately after the viva, the supervisor shall submit ONE copy of the Final thesis report in hard copy and Soft copy in CD, thesis abstract, attendance sheet and final evaluation form of Thesis and seminar course to the AUGSD Division in a sealed cover. The other copy will be retained by him. The student should ensure with his supervisor, so that the evaluation forms reach the division well before the last date of comprehensive examination. He should also verify all items of check-list.

5. MID- SEMESTER GRADING

This will be announced by the supervisor to his/her student as per date mentioned above.

6. MAKE-UP POLICY

Since thesis is a full time involvement, there is no scope of any make up in this course.

7. ATTENDANCE AND ROUTINE MATERS

- a) Thesis is a full time involvement and it is the responsibility of the student to be in full attendance. He should be available for interaction as frequently as desired by supervisor. In his mid-semester report, the student should state quantitatively his attendance for all the working days falling in the period of the report. A student is liable to be awarded NC if he does not cooperate with his supervisor.
- b) Every student has to sign his attendance regularly with the supervisor or as per the alternative arrangement made by the supervisor. An attendance sheet is being provided for this purpose to the supervisor. The candidate should apply and seek prior permission of his supervisor for going on leave for any genuine needs.

- c) If the leave or absent exceeds SEVEN days in the entire semester, the recommended final grade by the examiners may be revised by the instructor-in-charge in consultation with the supervisor.
- d) For routine matters such as work place, laboratory help, contingency expenditure etc, the concerned Department HOD may be contacted through the supervisor.
- e) For using central facilities like Computer centre, CAD, Instrumentation, workshop, IMA lab various stores etc; students must follow the procedures laid down by the respective In-charges of the facility.
- f) For field trips out of Goa, a complete plan indicating purpose, duration and place of work should be given through the supervisor to Faculty in-charge, AUGSD Division in advance for his approval. (Also consult Academic Regulations 6.21).
- g) The final viva cannot be held before the date on which comprehensive exam begins. The exact dates of final viva should be scheduled spanning within the comprehensive examination period. However, depending on the emergencies of individual situation, these dates may be changed. Therefore, the students should plan in such a manner so that they are available till the last date of comprehensive examination in the semester. **If the Thesis is not submitted on the last day of class work as stipulated and examiners do not have sufficient time to read the Report, student will only be responsible for any delay in holding the viva on the announced date.**
- h) The format of thesis cover/Title page and 'certificate from the supervisor' are appended.

NO OTHER FORMAT SHOULD BE USED. Abstract of the thesis should invariably be included in the thesis in the prescribed format. A suggested sequence for the organization of the Final Thesis is given below:

- i) First page (inner cover)
- ii) Acknowledgement
- iii) Certificate from the supervisor
- iv) List of symbols & Abbreviations used
- v) Thesis Abstract
- vi) Table of contents
- vii) chapters 1, 2, 3, etc
- viii) conclusion
- ix) Appendices
- x) Bibliography/References (in standard format)
- xi) List of publications / conference presentations, if any

Each student is expected to learn the standard methodology of presenting references and bibliographical details through library/self study work. Standard format should be used while reporting the same in Thesis. Mere reproduction from the books/papers should be avoided and relevant portion should only be referred.

8. CHAMBER CONSULTATION HOURS

Each student is expected to fix up consultation hours with his supervisor. He/She can meet the undersigned or the in- charge, FDT in AUGSD with a prior appointment.

CHECK LIST OF ITEMS FOR FINAL REPORT OF FIRST DEGREE THESIS

1. Is the Report 'cover/ Title page' in proper format?
2. Is supervisor's certificate in proper format? Has it been signed?
3. Is 'Abstract' included in the Report? Is it in proper format?
4. Does the 'contents' page include page numbers?
5. Does the Report contain a summary of the literature survey?
6. (a) Are the pages numbered properly ?
(b) Are the figures numbered properly?
(c) Are the tables numbered properly?
(d) Are the figures and tables titled properly?
(e) Are the appendices numbered?
7. Does the Report contain 'conclusion' of the work?
8. Are References / Bibliography given in the Report?
9. Have the 'References' been cited in the Report?
10. Is the citation of 'References and Bibliography' in the standard format?

Attention should be paid on the above items while preparing the FINAL REPORT. Supervisors are also requested to ensure that their candidates (s) have prepared the FINAL REPORT properly.

Format of the cover/ Title page of the Thesis

(Title of the Thesis)

THESIS

Submitted in partial fulfillment of the requirements of
BITS F421T/422T Thesis

by

(Author)

ID No- ()

Under the supervision of

Name and Designation of supervisor

Emblem

BITS, PILANI –K K BIRLA GOA CAMPUS

Date _____

I Format of ‘certificate from the supervisor ‘

CERTIFICATE

This is to certify that the Thesis entitled, _____

_____ is submitted by _____ ID No . _____

in partial fulfillment of the requirements of BITS F421T/422T Thesis embodies the work done by him/ her under my supervision.

Signature of the supervisor

Name
Designation

Date _____

OPERATIONAL DETAILS

The operational details for Instructors of the Thesis course are outlined below:

Thesis course

1. Please ask your student to supply their particulars to AUGSD Division in Proforma TS-1 given directly to him.
2. Please suggest a panel of Two examiners for evaluation of the Thesis. You are requested to inform the proposed examiners and obtain their consent. Efforts will be made to choose one examiner from the panel. You may invite the proposed examiners for the Mid semester and other presentation components.
3. Details of the evaluation are given in the Handout. The marks/grades obtained in each of the component should be entered in the Final evaluation form. The record should be kept ready for examination at a very short notice. The Final Thesis and viva performance should be jointly evaluated by you and the Examiner appointed by the supervisor.
4. After the Final viva, one copy each of the Thesis, the Final evaluation form and the Thesis abstract should be returned to the AUGSD Division. Thesis should reach the AUGSD Division within three days of the Final viva. The other Thesis copy and Evaluation Form should be retained by the supervisor.
5. The grades in Thesis are in terms of **A/A-/B/B-/C/C-/D/E**.
6. If the leave of absence exceeds SEVEN days in a semester the recommended final grade may be revised by the Instructor- in- charge in consultation with the supervisor. Supervisors are requested to verify the number of days a student has been on leave or on approved field trips.

Routine matters

1. Every student has to sign his attendance regularly with his supervisor in the attendance sheet. The signed attendance sheet should be returned to the AUGSD Division along with the Final Evaluation Form.
2. A student should not take more than SEVEN Days of leave in a semester. The supervisor may directly sanction him/her leave. If his absence exceeds more than seven days, his/her overall recommended grades may be revised by the Instructor- in –charge, AUGSD in consultation with the supervisor.
3. If the performance of the student is below expectation and if he is not cooperating, the supervisor should hold discussions and counsel him/her on this aspect. If he still does not improve, a written warning should be given to him/her with a copy endorsed to the Faculty in-charge, AUGSD Division.
4. Supervisors should send the recommended Mid-semester evaluation form to the AUGSD Division latest by 10th week. The recommended mid semester grade may be announced by the supervisor to his student directly.
5. For field trips of students outside Goa, a complete plan indicating purpose, duration and place of work should be given to Faculty in-charge, AUGSD in advance for his approval.
6. One copy of all reports sent to AUGSD Division should be retained. Entry in the evaluation form should be made regularly
7. Student should be kept informed of his/her performance in various components of evaluation.
8. The supervisor is requested to adhere to the dates given in the calendar of Events.
9. In Final THESIS REPORT specified formats of cover/Title page, supervisor's certificate, have to be adhered. **Thesis has to be word processed/typed on A4 size white paper.** References should be cited in a standard manner. Title of thesis should be proper and should be indicative of the type of work.
10. Supervisor should check the contents of the thesis and sign the 'certificate page before sending it to the examiners and AUGSD division.
11. Classify the Thesis topic in one of the following Areas of Research given in the Bulletin:

AREAS OF RESEARCH

1. Biological sciences & Biotechnology
2. Chemical Engineering
3. Chemistry
4. Computer science and Information systems
5. Economics, Finance and management
6. Electrical, Electronics, Microelectronics, control & Instrumentation
7. Language & Humanistic studies
8. Mathematical and physical science
9. Mechanical Engineering & manufacturing system
10. Science and society
11. Educational Innovation and institutional Development
12. Materials Science & Technology
13. Renewable Energy & Environment studies
- 14 Robotics and Intelligent systems
15. Software Engineering & multimedia

PARTICULARS OF THESIS

The student should correctly fill in this proforma immediately after all the changes (in topic, supervisor or both) are finalized and submit it to AUGSD Division within two weeks of registration.

A. Personal particulars

ID No. 2018B4A40071G Name Siddhant Setia

Local address: A-1004, Oberoi Esquire, Goregaon East, Mumbai, 400063 Mobile No. +91 9604000002

Permanent Home address & Tel. No. if any House No. 162, Sector 12A, Panchkula, Haryana,

134113

B. Thesis particulars

B. Thesis particulars
Name of Supervisor Dr Paul Rad

Thesis Topic: Catastrophic Forgetting and Ways to Overcome it

Research Area (consult Bulletin):
Robotics and Intelligent Systems

10th September 2022
Date

Signature of student

Panel of Examiners (To be suggested by the Supervisor)

S.No.	Name of Faulty	Dept/Div./Unit
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Date: 10th September 2022

Signature of Supervisor

OUTLINE OF FIRST DEGREE THESIS PROJECT

(Attach extra sheet, if necessary)

- Aim and objectives: To learn about why catastrophic forgetting occurs and propose a new method to overcome it and compare performance with EWC, iCaRL, ResCL and others.
- Background of work: Several studies have been conducted and several methods have been proposed to prevent catastrophic forgetting. Methods like use of memory buffers to store data where the stored data is then used to randomly retrain the model to improve memory retention, Elastic Response Distillation, Replay Processes, self organizing maps, and also EWC, iCaRL and ResCL.
- Plan of work: First 2 weeks will be spent reading theory including papers and past theses regarding Catastrophic Forgetting. Then 3 weeks on each of the following tasks: Proposing the custom method, Exploring benchmarks to evaluate accuracy, evaluate accuracy of EWC, iCaRL, ResCL using benchmarks and finally comparing performance of all methods and fine tuning custom method. The final week will be spent on report making and concluding the thesis.

Bibliography & References: Including but not limited to:

- [1] <https://arxiv.org/abs/2002.06774>
- [2] <https://arxiv.org/abs/1611.07725>
- [3] https://link.springer.com/chapter/10.1007/978-3-319-46182-3_15
- [4] <https://scholarworks.rit.edu/cgi/viewcontent.cgi?article=12135&context=theses>

Signature of Student

Signature of Supervisor

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
K K BIRLA GOA CAMPUS-AUGSD DIVISION
FIRST/SECOND SEMESTER 20 - 20
MID SEMESTER EVALUATION FORM

Section I

PARTICULARS (TO BE FILLED BY STUDENT AND RETURNED TO SUPERVISOR)

Semester_____ Session _____

ID No _____ Name of student _____

Name of supervisor _____

Section II

EVALUATION DETAILS (TO BE FILLED BY SUPERVISOR)

A. THESIS:

S.No	Evaluation Component	Max. Marks	Marks Awarded
1	Viva- 1	15	
2	Mid. Sem. Presentation	15	
3	Mid.sem.Written Report	15	
	Total	45	

Recommended Mid. Sem. Grade in Thesis(A/A-/B/B-/C/C-/D/E) :
Report (NC/I/w), if any:

Date:_____

Signature of Supervisor

N .B. Supervisor should announce the mid sem. Grade to his student directly and return the form to the AUGSD Division.

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
K K BIRLA GOA CAMPUS
AUGSD DIVISION
FIRST/SECOND SEMESTER 20 - 20

FINAL EVALUATION FORM: FIRST DEGREE THESIS

ID No. _____ Name of Student _____

Name of Supervisor _____

Title of Thesis (as on thesis) _____

1. EVALUATION IN THESIS

S.No.	Evaluation Component	Max Marks	Marks Awarded
1.	Viva-1	15	
2.	Mid Semester presentation	15	
3.	Mid Semester Report	15	
4.	Viva- II	15	
5.	Final thesis report	25	
6.	Final viva	15	
	Total	100	

RECOMMENDED FINAL GRADE IN THESIS (A/A-/B/B-/C/C-/D/E) :
Report (NC/W), if any:

Date

Signature of Examiner

Signature of Supervisor

Semester

Name of Examiner

Name of Supervisor

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
K K BIRLA GOA CAMPUS
AUGSD DIVISION
ATTENDANCE SHEET FOR FIRST DEGREE THESIS - FIRST/SECOND SEMESTER

1. PARTICULARS

Name of student _____ ID No _____ Supervisor _____

Hostel _____ Room No _____

11. Attendance (Student to sign his Initials)

Month	DATES																Total Working days	Days absent
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Aug/Jan																		
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Sep/Feb																		
Oct/Mar																		
Nov/Apr																		
Dec/May																		

NOTE : Supervisor may decide to keep this sheet with him or with the Department/Division office (in consultation with the in charge) and ask the student to sign on each working day before a particular specified time. This sheet should be returned to AUGSD division along with the Final Evaluation Form.

Date:

Supervisor Signature _____