BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI
Work Integrated Learning Programmes Division

M.Tech.in Data Science and Engineering

COURSE HANDOUT AND GUIDELINES

for

DSE CL ZG628T DISSERTATION

Contents

CALENDAR OF EVENTS

S. No.	Evaluation Component / Deliverable	From	To	To be conducted / submitted latest by
1.	**Start of Semester** (Registration to be completed.)	Student	BITS Coordinator	**16th May 2022** [begins with registration for the course]
2.	**Submission of Outline/ Abstract report**	Student	Viva Portal	**26th to 30th May, 2022**
3.	**Abstract – Review**	Student	Bits Examiner	**4th to 14th June, 2022**
4.	**Mid-Semester with Organization Mentor:-** The Organization Mentor / Supervisor has to conduct the Mid-Semester evaluation and complete the Mid-Semester Evaluation Sheet and send it along with the Mid-Semester Report.	Organization Mentor	Student	**Before 15th July, 2022**
5.	**Submission of Mid-Semester report -** The Student should prepare a report covering the details of the dissertation work done as per the 'Plan of Work' and submit it to the Organization Mentor / Supervisor. The Student has to give a Mid-semester Seminar to the Bits Examiner/ Supervisor.	Student	Viva Portal	**15th – 19th July, 2022**
6.	**Mid Semester Evaluation** With BITS Examiner	Student	BITS Examiner	**24th July, 2022 – 2nd Aug, 2022**
7.	**Final dissertation review - with Organization Mentor:-** The Organization Mentor / Supervisor has to conduct the End-Semester evaluation and complete the End-Semester Evaluation Sheet and Student to submit it along with the End-Semester Report.	Organization Mentor	Student	**Before 27th Aug, 2022**
8.	**Final Dissertation Report** (Submission of soft copy of the Final Dissertation Report along with the Organization Mentor / Supervisor evaluation report, to be uploaded in the dissertation management system)	Student	Supervisor	**27th – 31st Aug, 2022**
9.	**Final Semester – Viva review** to be conducted by the BITS examiner	Student	BITS Examiner	**10th – 22nd Sept, 2022**

DSECLZG628T **DISSERTATION**

Instructor-in-charge: Dean, WILP Division   **Instructors: All Supervisors**

SCOPE OF THE COURSE

This course provides an opportunity for the student to do some significant research and development work in assigned areas of professional interest. Each student will work under the overall guidance and supervision of a senior professional chosen from within the organization. This work should be of relevance to the professional work environment of the student, and beneficial to organization.

The course shall end with a well-defined Final Dissertation Report, which describes the investigations, achievements and conclusions of the dissertation work. The course shall enable the student to be trained in research and development methodology and presentation of the work in the form of a technical report.

OPERATION OF THE COURSE

1.   Each student should identify a topic that is of academic relevance to his/her professional environment and the M.Tech (Data Science and Engg) degree programme, and work under the guidance and supervision of a senior professional within his/her project team. The dissertation work should result in significant benefits for the professional work environment of the student. Each dissertation project should be done independently by only one student. **Two or more students cannot do a joint / combined dissertation work.**

2.   The student should prepare a detailed outline of the dissertation work in consultation with his/her Organizational Supervisor (Mentor). Current literature (journals, books etc.) must be methodically reviewed and the status of the work in the field must be considered. The detailed outline of the work must reflect a survey of the current literature in the same area and must include topic of research, objective, background of previous work in the area, methodology and a plan of work along with references and bibliography.

3.   The student should regularly interact with his Organizational Supervisor (Mentor) and present seminars and submit reports as per schedule given in the calendar. Other professional colleagues having expertise in the relevant domain may also be requested to attend the seminars.

4.   The Organizational Supervisor (Mentor) shall announce the Mid-semester grade to his/her student and send the Mid-Semester Evaluation Form to the Student, the same needs to be added in the report.

5.   **At the end of the** dissertation, Student submits the soft copy of the reports along with the supervisors evaluation report in the portal.

General Guidelines for the Dissertation Supervisor (Organizational)

●   Supervisors are requested to go through the Dissertation Handout carefully and understand the scope, objectives and methodology of a Dissertation project.

●   The Supervisor should assume the role of a mentor to the student for the dissertation. He/She should guide the student through the dissertation project and evaluate the progress on a regular basis, and also recommend a suitable grade at the end of each semester.

●   The Supervisor should set high quality standards for the dissertation work and motivate the student to work hard and show tangible results according to a well-defined plan.

●   The Supervisor should encourage the student to explore various sources and discover the ideas and knowledge pertaining to the dissertation work.

●   The dissertation students are to be treated as full-time students and full-time employees at the same time. Hence, no concession on quality or quantum of work should be made with respect to their job responsibilities or their dissertation work.

●   Dissertation requires a lot of hard work. The student should be urged to allocate a fixed, but substantial amount of time each day to the dissertation work, and record the progress made on a daily basis.

●   The Supervisor should monitor the progress of the dissertation through weekly interaction with the student. A specific time can be fixed for the weekly interaction with the student. If the progress of the dissertation work is not satisfactory, the supervisor should counsel the student and suggest ways to improve.

●   The Supervisor is responsible for the periodic evaluation of the dissertation and submission of the completed evaluation forms by the due dates specified.

●   The supervisor, if he / she desires, can request some of his/her colleagues who may be interested in the dissertation work, to attend the mid-semester and final seminar/viva.

●   The supervisor should conduct the final evaluation independently according to the schedule and submit the evaluation and the report to BITS.

EVALUATION SCHEDULE

S. No.	Component	Weightage	Evaluation to be duly completed and submitted by the Supervisor to BITS Coordinator latest by
1	**Detailed Outline/ Abstract of Work**	**10%**	**Before 25th May,2022**
2	**Mid. Sem. Evaluation**	**30%**	**Before 15th July, 2022**
3	**Final Evaluation Seminar / Viva 30% Final Report 30%**	**60%**	**Before 27th Aug,2022**

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. It is the responsibility of the student to interact regularly (at least once a week) with his/her Supervisor and discuss the progress of the work and plan subsequent activities. The details of time, venue and mode of each evaluation component are to be decided by the Supervisor, so that the evaluation can be conducted as per schedule given above.

Final Grading

Final Grading will be done by the BITS examiner on the basis of the progress made by the individual student towards attaining the overall objectives of the Dissertation work. Although marks are assigned for various evaluation components, the final grade shall be specified only as one of the following qualitative grades namely, EXCELLENT / GOOD / FAIR / POOR.

Note:

The Supervisor shall conduct the final viva-voce and evaluate the Final Dissertation report, and recommend a final grade, and send a copy of the final report and the final evaluation sheet to the BITS Coordinator by the due date.

The final dissertation reports and the final evaluation forms, which are submitted to the BITS Coordinator, will be sent to BITS. A panel of examiners chosen by BITS would evaluate the final reports independently, and then examine the grades recommended by the supervisors, and finalize the grade to be awarded.

If the quality of dissertation work of the student is not found to be acceptable by the supervisor or the panel of examiners from BITS, the student might be reported as Not Cleared (RRA) in Dissertation, which would require the student to register afresh for dissertation in a subsequent semester.

Guidelines for preparation of the Final Report (Student)

Some formats are provided for preparation of the abstract, cover page, title page, certificate from the Supervisor, and reference / bibliography. The student **should adhere** to these formats while preparing the report. A checklist of items to be included in the Final Report is also provided. The following sequence should be followed in the presentation of the Final Report:

1.   Cover Page
2.   Acknowledgements
3.   Certificate from the Supervisor
4.   Dissertation Abstract
5.   List of Symbols & Abbreviations used
6.   List of Tables
7.   List of Figures
8.   Table of contents
9.   Chapters 1, 2, 3, etc.
10.   Conclusions / Recommendations
11.   Directions for future work
12.   Bibliography / References
13.   Appendices
14.   List of Publications/Conference Presentations, if any.
15.   Duly Completed Checklist

Check list of items for the Final report

a)	Is the Cover page in proper format?	Y / N
b)	Is the Title page in proper format?	Y / N
c)	Is the Certificate from the Supervisor in proper format? Has it been signed?	Y / N
d)	Is Abstract included in the Report? Is it properly written?	Y / N
e)	Does the Table of Contents page include chapter page numbers?	Y / N
f)	Does the Report contain a summary of the literature survey?	Y / N
i.	Are the Pages numbered properly?	Y / N
ii.	Are the Figures numbered properly?	Y / N
iii.	Are the Tables numbered properly?	Y / N
iv.	Are the Captions for the Figures and Tables proper?	Y / N
v.	Are the Appendices numbered?	Y / N
g)	Does the Report have Conclusion / Recommendations of the work?	Y / N
h)	Are References/Bibliography given in the Report?	Y / N
i)	Have the References been cited in the Report?	Y / N
j)	Is the citation of References / Bibliography in proper format?	Y / N

Note: A copy of this checklist should be included as the last page of the Final report. This checklist, duly completed and signed by the student, should also be verified and signed by the supervisor. Supervisors are requested to ensure that the students have prepared their reports properly.

Illustrative examples of citation of bibliography / references:

1.   Book:
        A. Gelb, Applied Optimal Estimation. Cambridge, M.A.; M.I.T. Press, 1974.

2.   A paper in a Conference or Symposium Proceedings edited and published by a book publishing company:
        R.E. Kalman, 'New Methods in Wiener Filtering Theory', in Proc. First Symposium on Engineering Applications of Random Function Theory and Probability' J.L. Bogdanoff and F. Kozin, Editors. New York; Wiley, 1963, pp 270-388.

3.   A Journal Paper:
R.E. Kalman and N.S. Pucy, 'New results in linear filtering and prediction theory', Trans. ASME, J. Basic Eng., Vol. 83-D, pp. 95-108, Mar. 1961.

4.   A Conference Paper:
M. Vidyasagar and N.K. Bose, 'Input-output stability of linear systems defined over measure spaces', in Proc. Midwest Symp. Ciro. Syst., Montreal, P.O. Canada, Aug. 1975, pp 394-397.

5.   A Ph.D. thesis or Dissertation:
A.C.G. Viera, 'Matrix orthogonal polynomials, with applications to autoregressive modeling and ladder forms', Ph.D. Dissertation, Stanford Univ., Stanford, CA, Dec. 1977.

6.   A Private Communication:
W.M. Wonham (1982) Private Communication.

I.   Format of the Cover Page of the Dissertation

(Title of the Dissertation)

DISSERTATION

Submitted in partial fulfillment of the requirements of the

MTech Data Science and Engineering Degree programme

By

(Name of the student)
(BITS ID No.)

Under the supervision of

(Name and Designation of Supervisor)

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE
Pilani (Rajasthan) INDIA

(Month, Year)

II   Format of Certificate from the Supervisor (Organizational)

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI

CERTIFICATE

This is to certify that the Dissertation entitled _____

_____

and submitted by Mr./Ms._____ IDNo._____

in partial fulfillment of the requirements of DSECLZG628T Dissertation, embodies the work

done by him/her under my supervision.

Signature of the Supervisor

Name

Place: _____   Designation

Date:_____

III. The following format for <mark>Dissertation Abstract should be used</mark>

Dissertation Title :_____

Name of Supervisor :_____

Name of Student : _____

ID No. of Student :_____

Abstract

(Contents of the abstract is to be given here)
Abstract (in about 500 words)

Key Words:

(*Note:* *The Abstract should briefly describe the work done with respect to the goals, in about 500 words. The Abstract in the above format should be included in the bound Report, after the Acknowledgements and immediately before the Table of Contents. Of course, 02 copies of the abstract are to be submitted as loose sheets also along with the Final Report to the BITS Coordinator).*

BITS ID No._____ **Name of Student:**_____

Name of Supervisor: _____

Designation of Supervisor:_____

Qualification and Experience: _____

E- mail ID of Supervisor:_____

Topic of Dissertation: _____

              _____

Name of First Examiner: _____

Designation of First Examiner:_____

Qualification and Experience: _____

E- mail ID of First Examiner:_____

Name of Second Examiner: _____

Designation of Second Examiner:_____

Qualification and Experience:_____

E- mail ID of Second Examiner:_____

(Signature of Student)   (Signature of Supervisor)

Date:------------   Date:-------------

The Dissertation Outline should contain the following:

1.   Student details: Name, Roll #, email id, Mobile #
2.   Date
3.   Dissertation Title
4.   Supervisor details: Name, Role in organization, email id, Mobile #
5.   Problem statement (what is the problem being addressed)
6.   Business process flow, if any
7.   Objective of the project
8.   Uniqueness of the project
9.   Benefit to the organization
10.   Scope of work
11.   Resources needed for the project, including people, hardware, software, etc.
12.   Potential challenges & risks in doing the project
13.   Background of previous work done in the chosen area
14.   Solution architecture, if any
15.   Detailed Plan of Work (as follows)

#	Task	Expected date of completion	Names of Deliverables

Supervisor's Rating of the Technical Quality of this Dissertation Outline

EXCELLENT / GOOD / FAIR/ POOR (Please specify):   _____

Supervisor's suggestions and remarks about the outline (if applicable).

Date_____   _____

                                                              (Signature of Supervisor)

Name of the supervisor:

Email Id of Supervisor

Mob # of supervisor:

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI
Work Integrated Learning Programmes Division
II SEMESTER 21-22

DSE CL ZG628T **DISSERTATION**

(EC-2 Mid-Semester Progress Evaluation Sheet)

Scheduled Month :

NAME OF THE STUDENT: _____

ID NO. : _____

Email Address : _____

NAME OF SUPERVISOR : _____

PROJECT TITLE : _____

EVALUATION DETAILS

EC No.	Component	Weightage	Comments (Technical Quality, Originality, Approach, Progress, Business value)	Marks Awarded
1	Dissertation Outline	10%		
2.	Mid-Sem Progress			
	Seminar	10%		
	Viva	5%		
	Work Progress	15%		

	Organizational Mentor	
Name		
Qualification		
Designation & Address		
Email Address		
Signature		
Date		

Note: *Supervisor should announce the Mid-Semester grade to the student directly and send the completed evaluation form (along with the mid- sem report) to the BITS Coordinator on or before the due date.*

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI
Work Integrated Learning Programmes Division
II SEMESTER 21-22

DSE CL ZG628T **DISSERTATION**

(Final Evaluation Sheet)

NAME OF THE STUDENT: ————————————————————

ID NO. : ————————————————————

Email Address : ————————————————————

NAME OF THE SUPERVISOR: ————————————————————

PROJECT TITLE : ————————————————————

(Please put a tick (☐) mark in the appropriate box)

S.No.	Criteria	Excellent	Good	Fair	Poor
1	Work Progress and Achievements				
2	Technical/Professional Competence				
3	Documentation and expression				
4	Initiative and originality				
5	Punctuality				
6	Reliability				
	Recommended Final Grade				

EVALUATION DETAILS

EC No.	Component		Weightage	Marks Awarded
1	Dissertation Outline		10%	
2	Mid-Sem Progress			
		Seminar	10%	
		Viva	5%	
		Work	15%	
	Progress			
3	Final Seminar/Viva		20%	
4	Final Report		40%	
	Total out of		100%	

	Organizational Mentor	
Name		
Qualification		
Designation & Address		
Email Address		
Signature		
Date		

NB: Kindly ensure that recommended final grade is duly indicated in the above evaluation sheet.
POSTAL ADDRESS FOR ALL FUTURE CORRESPONDENCE. FILL IT UP NEATLY IN CAPITAL LETTER WITH PIN CODE ETC.

Address:
_____

_____

Pin Code _____

Note: The Final Evaluation Form should NOT be bound with the report. It has to be submitted separately.