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APJ Abdul Kalam Technological University
Thiruvananthapuram

Abstract

Academic - M. Tech 2022 Regulations - Dissertation Phase I and Phase II (Track I) Syllabus approval and Mode of Evaluation for Internship - orders issued - reg

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ACADEMIC SECTION

U.O.No. 3070/2023/KTU   Thiruvananthapuram, Dated: 25.11.2023

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*Read:-*1. Minutes of the meeting of the Board of Studies (PG) held on 15/11/2023.

ORDER

Vide paper read as above, the Board of Studies (PG) has finalized the syllabus for the M. Tech Dissertation Phase I in Semester III and Dissertation Phase II in Semester IV of Track I, 2022 Regulations.

The meeting of the Board of Studies (PG) pointed out the difficulty in conducting the end-semester viva voice for the Internship in Semester III with external members and recommended to conduct the end-semester evaluation of the internship internally. This internal evaluation would be carried out by a committee comprising the Faculty Supervisor, PG Program Coordinator, and one faculty member from a sister department.

Sanction is accorded to implement the recommendations of the Board of Studies (PG) for approving the syllabus for the M. Tech Dissertation Phase I (Semester III) and Dissertation Phase II (Semester IV) of Track I, attached as annexure and the Mode of evaluation for Internship in Semester III, 2022 Regulations, subject to ratification by the Academic Council.

This order is issued under Sub Section (5) of Section 14 of the APJ Abdul Kalam Technological University Act, 2015 (17 of 2015).

Orders are issued accordingly.

Sd/-

Dr Saji Gopinath *
Vice Chancellor

Copy to:-

1.KTU Affiliated Colleges
2.JD(IT)for necessary action
3.PA to Dean Academic
4.PA to Registrar

CODE	COURSE NAME	CATEGORY	L	T	P	CREDIT
223PXX100	DISSERTATION PHASE I	Project Work	0	0	17	11

COURSE OBJECTIVES:

Dissertation is aimed to bridge the gap between theoretical knowledge and practical application, fostering a well-rounded skill set that prepares students for success in their future engineering careers. Engineering projects often simulate real-world engineering scenarios. This exposure allows students to become familiar with industry practices, standards, and expectations and preparing them for the challenges they might face in their future careers. Depending on the nature of the project, students may acquire practical skills related to specific tools, software, or equipment. This hands-on experience can be highly beneficial when transitioning to a professional engineering role.

Dissertation Phase I can help to identify the problem based on the area of interest through proper literature survey and to foster innovation in design of products, processes or systems based on the identified problem. perform feasibility study by creative thinking and requirement analysis in finding viable solutions to engineering problems

All categories of students in track 1 are to carry out the dissertation in the Institute they are studying or in any CSIR/Industrial/ R&D organization/any other reputed institute which have facilities for dissertation work in the area proposed.

Course Outcomes:

After the completion of the course the student will be able to

CO 1	Identify and define a relevant and significant problem or challenge in the relevant field
CO2	Formulate research methodologies for the innovative and creative solutions
CO 3	Plan and execute tasks utilizing available resources within timelines, following ethical professional and financial norms
CO 4	Organize and communicate technical and scientific findings effectively in written reports, oral presentation, and visual aids

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO7
CO 1	3		3	2	2	3	2
CO 2	3		3	3	3	2	
CO 3	3		2		3	3	2
CO 4		3	3	2			2

Continuous Internal Assessment (CIA) Total Marks: 100
The evaluation committee comprises

1- Project Coordinator(s)
2- A Senior faculty member
3- Supervisor of the student

Pattern:

Zeroth evaluation by the Evaluation Committee	-
Interim evaluation by the Evaluation Committee	20 marks
Final evaluation by the Evaluation Committee	40 marks
Project Phase - I Report (By Evaluation Committee)	20 marks
Project progress evaluation by supervisor	20 marks

The Plagiarism level in the project report shall be less than 25%.

Interim Review

Literature Survey (CO1- 5 marks)

Comprehension and Problem Identification (CO2-5 marks)

Objective Identification (CO2-5 marks)

Document Preparation and Presentation (CO4-5 marks)

Final Review

Literature Survey (CO1-10 marks)

Project Design (CO2-10 marks)

Execution of tasks by utilizing available resources within timelines (CO3 – 10 marks)

Presentation and document preparation (CO4-10 marks)

Evaluation by the supervisor

The guide/supervisor shall monitor the progress being carried out by the student on a regular basis. In case it is found that progress is unsatisfactory it shall be reported to the Department Evaluation Committee for necessary action.

Student's Diary/ Log book: The main purpose of writing diary/log book is to cultivate the habit of documenting and to encourage the students to search for details. The activity diary shall be signed after every week by the supervisor.

The minimum attendance for completing the course is 75%. The pass minimum for the course is 50% for CIA.

SYLLABUS:

DETAILS	HOURS
` 1. Literature study/survey of published literature on the assigned topic 2. Formulation of objectives 3. Formulation of hypothesis/ design/ methodology 4. Formulation of work plan and task allocation. 5. Design documentation 6. Preliminary analysis/Modelling/Simulation/Experiment/Design/Feasibility study 7. Preparation of Phase 1 report	150

Dissertation outside the Institute: For doing dissertation outside the Institution, the following conditions are to be met:

i. They have completed successfully the course work prescribed in the approved curriculum up to the second semester.
ii. The student has to get prior approval from the DLAC and CLAC.
iii. Facilities required for doing the dissertation shall be available in the Organization/Industry (A certificate stating the facilities available in the proposed organization and the time period for which the facilities shall be made available to the student, issued by a competent authority from the Organization/Industry shall be submitted by the student along with the application).
iv. They should have an external as well as an internal supervisor. The internal supervisor should belong to the parent institution and the external supervisor should be Scientists or Engineers from the Institution/Industry/ R&D organization with which the student is associated for doing the dissertation work. The external supervisor shall be with a minimum post graduate degree in the related area.
v. The student has to furnish his /her monthly progress as well as attendance report signed by the external supervisor and submit the same to the concerned Internal supervisor.
vi. The external supervisor is to be preferably present during all the stages of evaluation of the dissertation.

Internship leading to Dissertation: The M. Tech students who after completion of 6 to 8 weeks internship at some reputed organizations are allowed to continue their work as dissertation for the third and fourth semester after getting approval from the CLAC. Such students shall make a brief presentation regarding the work they propose to carry out before the DLAC for a detailed scrutiny and to resolve its suitability for accepting it as an M.Tech dissertation. These students will be continuing as regular students of the Institute in third semester for carrying out all academic requirements as per the curriculum/regulation. However, they will be permitted to complete their dissertation in the Industry/Organization (where they have successfully completed their internship) during fourth semester. They should have an external as well as an internal supervisor. The internal supervisor should belong to the parent institution and the external supervisor should be Scientists or Engineers from the external organization with which the student is associated for doing the dissertation work. The external supervisor shall be with a minimum post graduate degree in the related area. The student has to furnish his /her monthly progress as well as attendance report signed by the external guide and submit the same to the concerned internal guide. The external guide is to be preferably present during all the stages of evaluation of the dissertation.

Dissertation as part of Employment: Students may be permitted to discontinue the programme and take up a job provided they have completed all the courses till second semester (FE status students are not permitted) prescribed in the approved curriculum. The dissertation work can be done during a later period either in the organization where they work if it has R&D facility, or in the Institute. Such students should submit application with details (copy of

employment offer, plan of completion of their project etc.) to the Dean (PG) through HoD. The application shall be vetted by CLAC before granting the approval. When the students are planning to do the dissertation work in the organization with R&D facility where they are employed, they shall submit a separate application having following details:

i. Name of R&D Organization/Industry
ii. Name and designation of an external supervisor from the proposed Organization/Industry (Scientists or Engineers with a minimum post graduate degree in the related area) and his/her profile with consent
iii. Name and designation of a faculty member of the Institute as internal supervisor with his/her consent
iv. Letter from the competent authority from the Organization/Industry granting permission to do the dissertation
v. Details of the proposed work
vi. Work plan of completion of project

DLAC will scrutinize the proposal and forward to CLAC for approval. When students are doing dissertation work along with the job in the organization (with R & D facility) where they are employed, the dissertation work shall be completed in four semesters normally (two semesters of dissertation work along with the job may be considered as equivalent to one semester of dissertation work at the Institute). Extensions may be granted based on requests from the student and recommendation of the supervisors such that he/she will complete the M. Tech programme within four years from the date of admission as per the regulation. Method of assessment and grading of the dissertation will be the same as in the case of regular students. The course work in the 3rd semester for such students are to be completed as per the curriculum requirements (i) MOOC can be completed as per the norms mentioned earlier (ii) Audit course are to be carried out either in their parent Institution or by self-learning. However, for self-learning students, all assessments shall be carried out in their parent institution as in the case of regular students.

CODE	COURSE NAME	CATEGORY	L	T	P	CREDIT
224PXX100	DISSERTATION PHASE II	Project Work	0	0	24	16

All categories of students in track 1 are to carry out the DISSERTATION PHASE II in the institute they are studying or in any Industrial/ R&D organization/any other reputed institute which have facilities for dissertation work in the area proposed. DISSERTATION PHASE II shall not compulsorily continuation of DISSERTATION PHASE I. The student has to publish a research article in a conference or a reputed journal before appearing for the end-semester examination. The eligibility criteria for registering to the end semester examination are attendance in the course and no pending disciplinary action. The minimum attendance for appearing for the end semester examination is 75%. Students who do not meet these eligibility criteria are ineligible (identified by FE grade) to appear for the ESE. Students, who have completed a course but could not appear for the end semester examination, shall be awarded 'AB' Grade, provided they meet other eligibility criteria The pass minimum for the course is 45% for ESE and 50% for (CIA and ESE) put together.

Continuous Internal Assessment (CIA) Total Marks: 100

The evaluation committee comprises

      1- Project Coordinator(s)

      2- A Senior faculty member

      3- Supervisor of the student

Pattern (CIA)

Zeroth evaluation by the Evaluation Committee	-
Interim evaluation by the Evaluation Committee	30 marks
Final evaluation by the Evaluation Committee	50 marks
Project progress evaluation by supervisor	20 marks

Evaluation by the supervisor

The guide/supervisor shall monitor the progress being carried out by the student on a regular basis. In case it is found that progress is unsatisfactory it shall be reported to the Department Evaluation Committee for necessary action.

Student's Diary/ Log book: The main purpose of writing diary/log book is to cultivate the habit of documenting and to encourage the students to search for details. The activity diary shall be signed after every week by the supervisor.

End Semester Evaluation (ESE) Total Marks: 100

The evaluation committee comprises

      1- Project Coordinator(s)

      2- An external expert (from Industry or research/academic institute)

      3- Supervisor of the student

Pattern (ESE)

1. **Innovation and Originality (10 marks):**

Assessment of the uniqueness and innovation demonstrated in the project work.
Original contributions, if any, to the field or problem area.

2. **Implementation and Execution (20 marks):**

Evaluation of the actual implementation or execution of the project, including:
   Quality of work done
   Demonstrated skills and techniques applied
   Adherence to project timelines and milestones

3. **Project Documentation (25 marks):**

Comprehensive project report evaluation including:
   Introduction and problem statement
   Literature review
   Methodology and approach
   Results and analysis
   Conclusion and recommendations
   References and citations
   Details of the publications
   Plagiarism certificate

The Plagiarism level in the project report shall be less than 25%.

4. **Presentation and Defence (40 marks):**

Oral presentation of the project to a panel of examiners, including:
   Clarity and effectiveness of the presentation
   Ability to explain the project objectives, methodologies, and findings
   Handling questions and providing satisfactory answers during the defence

5. **Publication of the work either in a conference or in a journal (5 marks)**

   SYLLABUS:

DETAILS	HOURS
` 1. Literature study/survey of published literature on the assigned topic 2. Topic Selection and Proposal 3. Formulation of objectives 4. Research and Planning 5. Formulation of work plan and task allocation. 6. Execution 7. Documentation and Reporting 8. Project Showcase reflecting on the project experience and lessons learned	200

Dissertation outside the Institute: For doing dissertation outside the Institution, the following conditions are to be met:

i. They have completed successfully the course work prescribed in the approved curriculum up to the second semester.

ii. The student has to get prior approval from the DLAC and CLAC.

iii. Facilities required for doing the dissertation shall be available in the Organization/Industry (A certificate stating the facilities available in the proposed organization and the time period for which the facilities shall be made available to the student, issued by a competent authority from the Organization/Industry shall be submitted by the student along with the application).

iv. They should have an external as well as an internal supervisor. The internal supervisor should belong to the parent institution and the external supervisor should be Scientists or Engineers from the Institution/Industry/ R&D organization with which the student is associated for doing the dissertation work. The external supervisor shall be with a minimum post graduate degree in the related area.

v. The student has to furnish his /her monthly progress as well as attendance report signed by the external supervisor and submit the same to the concerned internal supervisor.

vi. The external supervisor is to be preferably present during all the stages of evaluation of the dissertation.