CURRICULUM AND DETAILED SYLLABI

FOR

M. TECH DEGREE PROGRAMME

IN

IoT and Sensor Systems

2026 SCHEME
(AUTONOMOUS)

MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, Autonomous Institution Affiliated to APJ Abdul Kalam Technological University)
MAR IVANIOS VIDYANAGAR, NALANCHIRA, THIRUVANANTHAPURAM – 695015, KERALA.
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

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Items	Board of Studies (BoS)	Academic Council (AC)
Date of Approval	27-02-2026	12-03-2026



Head of Department
Chairman, Board of Studies



Principal
Chairman, Academic Council

MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

Vision and Mission of the Institution

Vision:

To be an Institution moulding globally competent professionals as epitomes of Noble Values.

Mission:

To transform the Youth as technically competent, ethically sound and socially committed professionals, by providing a vibrant learning ambience for the welfare of humanity.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Vision and Mission of the Department

Vision:

To be a Centre of Excellence in Electronics and Communication Engineering Education and Research for the service of humanity.

Mission:

To provide quality Engineering Education and to carry out Research in the field of Electronics and Communication Engineering addressing the challenges faced by the society.

PROGRAM OUTCOMES - PO

Program outcomes are the attributes that are expected to be demonstrated by a graduate after completing the course.

PO1: An ability to independently carry out research/ investigation and development work in engineering and allied streams

PO2: An ability to communicate effectively, write and present technical reports on complex engineering activities by interacting with the engineering fraternity and with society at large.

PO3: An ability to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program

PO4: An ability to apply stream knowledge to design or develop solutions for real world problems by following the standards

PO5: An ability to identify, select and apply appropriate techniques, resources and state-of-the-art tool to model, analyze and solve practical engineering problems.

PO6: An ability to engage in life-long learning for the design and development related to the stream related problems taking into consideration sustainability, societal, ethical and environmental aspects

PO7: An ability to develop cognitive load management skills related to project management and finance which focus on Entrepreneurship and Industry relevance.

CURRICULUM

Semester I (M1)

Slot	Course Type	Course Code	Course	Marks		Hours L - T - P	Credits
				CIA	ESE		
A	PCC	26EC161A	Random Process and Applications	50	50	4 – 0 - 0	4
B	PCC	26EC161B	IoT Fundamentals and Architecture	50	50	4 – 0 - 0	4
C	PCCP	26EC161C	Principles of Sensors and Signal Conditioning	50	50	3 – 0 - 2	4
D	PEC/PECP		Program Elective Course1/ Program Elective Course with practical component 1	50	50	3 – 0 – 0/ 2 – 1 – 0/ 2 – 0 - 2	3
E	PEC/PECP		Program Elective Course2/ Program Elective Course with practical component 2	50	50	3 – 0 – 0/ 2 – 1 – 0/ 2 – 0 - 2	3
S	AC	26AC061A	Research Methodology & IPR	50	50	2 – 0 - 0	0
T	LBC	26EC169A	IoT Data Acquisition and Analysis Lab	100	-	0 – 0 - 3	2
Total				**400**	**300**	**23-28**	**20**

Teaching Assistance: 6 hours

Program Elective Courses and Program Elective Course with practical component in M1 and M2 must be chosen from a single basket of all PECs and PECPs.

Semester II (M2)

Slot	Course Type	Course Code	Course	Marks		Hours L - T - P	Credits
				CIA	ESE		
A	PCCP	26EC161D	Microcontrollers for IoT	50	50	3 – 0 - 2	4
B	PEC/PECP		Program Elective Course 3/ Program Elective Course with practical component 3	50	50	3 – 0 – 0/ 2 – 1 – 0/ 2 – 0 - 2	3
C	PEC/PECP		Program Elective Course 4/ Program Elective Course with practical component 4	50	50	3 – 0 – 0/ 2 – 1 – 0/ 2 – 0 - 2	3
D	IEC/ SAEC*		Industry Elective / Skill/Ability Enhancement Course	50/-	50/-	3/2-0-0/2	3
S	PR	26EC167A	Mini project	100	-	0 – 0 - 6	3
T	LBC	26EC169B	IoT and Sensor Systems Lab	100	-	0 – 0 - 3	2
Total				**400**	**200**	**22-26**	**18**

Teaching Assistance: 6 hours

***Marks / GPA earned in this SAEC will be used for awarding GPA for this course.**

Semester III (M3)

Slot	Course Type	Course Code	Course	Marks		Hours L - T - P	Credits
				CIA	ESE		
A	SAEC**		Skill/ Ability Enhancement Course	To be successfully completed		-	3
D	PR	26EC178A	Project (Phase I)/ Project/ Internship	100 100 100	- 100 -	0-0-24 0-0-24 Industry norms	16
Total				**100**	**-/100/-**	**24**	**19**

Teaching Assistance for students doing Project (Phase I)/ Project in the college: 5 hours
**** This SAEC can be carried out at any time from M1 to M3, and credited in M3.**

Semester IV (M4)

Slot	Course Type	Course Code	Course	Marks		Hours L - T - P	Credits
				CIA	ESE		
D	PR	26EC178B	Project (Phase II)/ Project/ Internship	100 100 100	100 100 -	0 – 0 – 24 0 – 0 – 24 Industry norms	16
Total				**100**	**100/100/ -**	**24/ industry norms**	**16**

Teaching Assistance: 5 hours
Out of the 100 marks for internal assessment, 15 marks is reserved for publication. The project work shall be accepted for publication or published in a journal/ Conference before the final evaluation.

List of Program Elective Courses

Category Code	Course Number	Course Name	L	T	P	Credit
PEC	26EC162A	Flexible and Wearable Sensors	3	0	0	3
	26EC162B	Micro and Nano Fluidics	3	0	0	3
	26EC162C	Machine Learning	2	0	2	3
	26EC162D	Automotive Sensors and in-Vehicle Networking	3	0	0	3
	26EC162E	Cloud and Fog Computing	3	0	0	3
	26EC162F	IoT Security and Trust	3	0	0	3
	26EC162G	Biomedical sensors	3	0	0	3
	26EC162H	RF MEMS	3	0	0	3
	26EC162I	Wireless Sensor Networks and IoT	3	0	0	3
	26EC162J	IoT Applications and Web development	3	0	0	3
	26EC162K	Chemical and Environmental Sensor	3	0	0	3
	26EC162L	Nano Sensors	3	0	0	3
	26EC162M	Deep Learning	2	0	2	3
	26EC162N	Embedded Systems Design	3	0	0	3
	26EC1620	RF and Microwave Sensors	3	0	0	3
	26EC162P	Micro Systems and Hybrid Technology	3	0	0	3
	26EC262Q	Digital VLSI Design	2	0	2	3
	26EC162R	Fiber optic Sensors	3	0	0	3
	26EC162S	Large Scale Data Analytics	3	0	0	3

INDUSTRY ELECTIVE COURSES

Category Code	Course Number	Course Name	L	T	P	Credit
IEC	26EC166A	Automotive Electronics	3	0	0	3

Assessment Pattern

a) Program Core Course/ Program Core Course with practical component

A Program Core Course can be conducted as a theory course or a theory course along with its related laboratory experiments. A Program Core Course conducted as a theory course along with its related laboratory experiments comes under the course type PCCP. A PCC/ PCCP is evaluated out of 100 marks; 50 marks for Continuous internal assessment (CIA) and 50 marks for End semester evaluation (ESE).
Evaluation shall include application, analysis, and design-based questions for both CIA and ESE.

Continuous Internal Assessment (CIA): 50 marks

Micro project/Laboratory/ Course based project:	30 marks
Course based task/ Seminar/Quiz:	10 marks
Continuous Assessment Test (CAT), 1 No: (CAT shall include minimum 60% of the syllabus)	10 marks

Micro project/ Course based project shall be done individually. Group projects are not permitted.

End Semester Examination (ESE): 50 marks

ESE will be conducted by the Controller of Examinations (CoE). Duration of the examination shall be 180 minutes.

The question paper will contain 7 questions with minimum one question from each module, having 10 marks for each question. A question can have sub parts. Students shall answer any five questions.

The questions shall be useful in the testing of knowledge, skills, comprehension, application, analysis, synthesis, overall achievement and maturity of the students in a course, through questions relating to theoretical/ practical knowledge, derivations, problem solving and quantitative evaluation.

b) Program Elective Course/ Program Elective Course with practical component

A Program Elective Course can be conducted as a theory course or a theory course along with its related laboratory experiments. A Program Elective Course conducted as a theory course along with its related laboratory experiments comes under the course type PECP. A PEC/ PECP is evaluated out of 100 marks; 50 marks for CIA and 50 marks for ESE.
Evaluation shall include application, analysis, and design based questions for both CIA and ESE.

Continuous Internal Assessment: 50 marks

Preparing a review article based on peer reviewed original publications (Minimum 10 publications shall be referred)/ Micro project/Laboratory : 30 marks

Course based task/ Seminar/ Data collection and interpretation: 10 marks

Continuous Assessment Test (CAT), 1 No: 10 marks
(CAT shall include minimum 60% of the syllabus)

End Semester Examination: 50 marks

The ESE will be conducted by the CoE. Duration of the examination shall be 180 minutes.

The question paper will contain 7 questions with minimum one question from each module, having 10 marks for each question. A question can have two or more sub parts. Students shall answer any five questions.

The questions shall be useful in the testing of knowledge, skills, comprehension, application, analysis, synthesis, testing of overall achievement and maturity of the students in a course, through questions relating to theoretical/ practical knowledge, derivations, problem solving and quantitative evaluation.

c) Audit Course (Research Methodology and IPR)

An audit course is evaluated out of 100 marks; 50 marks for CIA and 50 marks for ESE.

Continuous Internal Evaluation: 50 marks

Course based task: 20 marks

Seminar/Quiz: 20 marks

Continuous assessment Test (CAT), 1 No: 10 marks
(CAT shall include minimum 60% of the syllabus)

End Semester Examination: 50 marks

The ESE will be conducted by the CoE. Duration of the examination shall be 180 minutes.

The question paper will contain 7 questions with minimum one question from each module, having 10 marks for each question. Students shall answer any five questions.

d) Internship

Internships are educational and career development opportunities, providing practical experience in a field or discipline. They are structured, short-term, supervised placements often focused around particular tasks or projects with defined timescales. A student has the opportunity to do internship for one semester either

in M3 or in M4. Such students will carry out a Project work in the other semester.

An internship may be compensated or non-compensated by the organization providing the internship. Internship has to be meaningful and mutually beneficial to the intern and the organization. It is important that the objectives of the internship program are clearly defined and understood. Internship offers the students an opportunity to

(i) Gain hands-on industrial or organizational exposure
(ii) Integrate the knowledge and skills acquired through his/her coursework
(iii) Interact with professionals and other interns, and
(iv) Improve the presentation, writing, and communication skills of interns.

Internship often acts as a gateway for final placement for many students.
A student shall carry out the Internship at an Industry/ Research Organization or at another institute of higher learning and repute (Academia). The students must select the organization for doing Internship on their own, with prior approval from the respective PG Programme coordinator. Every student shall be assigned a Faculty supervisor at the beginning of his/her Internship. The training shall be related to their specialization. The internship must be carried out for duration of four to five months, during the third semester or fourth semester. On completion of the Internship course, the student is expected to be able to develop skills in facing and solving the problems experienced in the related field.

Objectives

- Exposure to the industrial environment, which cannot be simulated in the class room and hence creating competent professionals for the industry.
- Provide possible opportunities to learn understand and sharpen the real time technical/ managerial skills required at the job.
- Exposure to the current technological developments relevant to the subject area of training.
- Create conducive conditions with quest for knowledge and its applicability on the job.
- Understand the social, environmental, economic and administrative considerations that influence the working environment.
- Exposure to the engineer's responsibilities and ethics.

Benefits of Internship to Students

- An opportunity to get hired by the Industry/ organization.
- Practical experience in an organizational setting and Industry environment.
- An opportunity to see how the theoretical aspects learned in classes are integrated into the practical world. On-floor experience provides much more professional experience which is often worth more than classroom teaching.
- Helps the intern to decide if the industry and the profession is the best career option to pursue.
- Opportunity to learn new skills and supplement knowledge.

- Opportunity to practice communication and teamwork skills.
- Opportunity to learn strategies like time management, multi-tasking etc. in an industrial setup.
- Makes a valuable addition to their resume
- Enhances their candidacy for higher education/placement.
- Creating network and social circle and developing relationships with industry people.
- Provides opportunity to evaluate the organization before committing to a fulltime position.

Benefits of Internship to the Institute

- Build industry academia relations.
- Makes the placement process easier.
- Improve institutional credibility and branding.
- Curriculum revision can be made based on feedback from Industry/ students.
- Improvement in teaching learning process.

Benefits of Internship to the Industry

- Availability of ready to contribute candidates for employment.
- Students bring new perspectives to problem solving.
- Visibility of the organization is increased on campus.
- Quality candidate's availability for temporary or seasonal positions and projects.
- Freedom for industrial staff to pursue more creative projects.
- Availability of flexible, cost-effective workforce not requiring a long-term employer commitment.
- Cost-effective way to recruit and evaluate potential employees.
- Enhancement of employer's image in the community by contributing to the educational enterprise.

Types of Internships

- Industry Internship with/ without Stipend
- Government / PSU Internship (BARC/ Railway/ ISRO etc.)
- Internship with prominent education/ Research Institutes
- Internship with Incubation centers/ Start-ups

Guidelines

- The duration of internship must be for a minimum of four months and a maximum of five months.
- Students can take mini projects, assignments, case studies by discussing it with concerned authority from industry and can work on it during internship.
- All students should compulsorily follow the rules and regulations of the industry.
- Every student should take prior permissions from concerned industrial authority if they want to use any drawings, photographs or any other document from industry.

- Student should follow all ethical practices and Standard Operating Procedure (SOP) of the industry.
- Students must take necessary health and safety precautions as laid by the industry.
- Student should contact his /her Guide/Supervisor from the College on a weekly basis to communicate the progress.
- Each student has to maintain a diary/log book
- After completion of internship, students are required to submit

✓ Report of work done
✓ Copy of Internship certificate
✓ Feedback from internship mentor in the place of internship
✓ Proof of stipend (in case of paid internship).

Evaluation of Internship

Internship will be evaluated out of 100 marks for CIA.

Student's diary/ Daily Log:	25 Marks
Evaluation done by the Industry:	25 Marks
Internship Report:	25 Marks
Comprehensive Viva Voce:	25 Marks

Student's Diary/ Daily Log:

The main purpose of writing daily diary is to cultivate the habit of documenting and to encourage the students to search for details. It develops the students' thought process and reasoning abilities. The students should record in the daily training diary the day to day account of the observations, impressions, information gathered and suggestions given, if any. It should contain the sketches and drawings related to the observations made by the students. Student's diary must be signed each day by the supervisor/ in charge of the section where the student has been working.

Format of Student's Diary

Name of the Organization/Section:

Name and Address of the Section Head:

Name and Address of the Supervisor:

Name and address of the student:

Internship Duration: From ..... To .....

Brief description about the nature of internship:

Day	Brief write up about the Activities carried out: Such as design, sketches, result observed, issues identified, data recorded, etc.

1	
2	
3	

Signature of Industry supervisor Signature of Head/ HR
Manager

Office Seal

Format of Attendance Sheet

Name of the Organization/ Section:

Name and Address of the Section Head:

Name and Address of the Supervisor:

Name and address of the student:

Internship Duration: From ..... To .....

Month & Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	...
Month & Year																			
Month & Year																			

Signature of Industry supervisor Signature of Head/ HR

Manager

Office Seal

Note:

- Student's Diary shall be submitted by the students along with attendance record and an evaluation sheet duly signed and stamped by the industry to the Institute immediately after the completion of the training.
- Attendance Sheet should remain affixed in daily training diary. Do not remove or tear it off.
- Student shall sign in the attendance column. Do not mark 'P'.
- Holidays should be marked in red ink in the attendance column. An absence should be marked as 'A' in red ink.

Student's diary will be evaluated on the basis of the following criteria:

- Regularity in maintenance of the diary
- Adequacy and quality of information recorded
- Drawings, design, sketches and data recorded
- Thought process and recording techniques used
- Organization of the information.

Format for Evaluation of Intern by industry

Student Name : Date:

Supervisor Name : Designation:

Company/ Organization :

Internship Address:

Dates of Internship: From_____ To_____

Please evaluate intern by indicating the frequency with which you observed the following parameters:

Parameters/ Marks	Needs improvement (0 – 0.25 marks)	Satisfactory (0.25 – 0.5 marks)	Good (0.75 marks)	Excellent (1 mark)
Behavior				
Performs in a dependable manner				
Cooperates with coworkers and supervisor				
Shows interest in				

work				
Learns quickly				
Shows initiative				
Produces high quality work				
Accepts responsibility				
Accepts criticism				
Demonstrates organizational skills				
Uses technical knowledge and expertise				
Shows good judgment				
Demonstrates creativity/ originality				
Analyzes problems effectively				
Is self reliant				
Communicates well				
Writes effectively				
Has a professional attitude				
Gives professional appearance				
Is punctual				

Uses time effectively				

Overall performance of student Intern (Please Tick one):

Needs improvement (0.50 marks)
Satisfactory (1.0 mark)
Good (1.5 marks)
Excellent (2.0 marks)

Additional comments, if any (2 marks):

Signature of Industry Supervisor *Signature of Section Head/HR Manager*

Office Seal

Internship Report:

After completion of the internship, the student should prepare a comprehensive report to indicate what he has observed and learnt in the training period and should be submitted to the faculty Supervisor. The student should prepare the final report on the assigned topics. Diary/ daily log will also help to a great extent in writing the report since much of the information has already been incorporated by the student into the diary. The training report should be signed by the Internship supervisor, PG Programme Coordinator and Faculty mentor.

The Internship report will be evaluated on the basis of following criteria:

- Originality
- Adequacy and purposeful write-up
- Organization, format, drawings, sketches, style, language etc.
- Variety and relevance of learning experience
- Practical applications, relationships with basic theory and concepts taught in the course

Comprehensive Viva Voce:

Viva Voce will be done by a committee comprising Faculty Supervisor, PG Programme Coordinator, and one faculty member from a sister department. This committee shall evaluate the internship report also.

e) Laboratory Courses

Laboratory courses will have only continuous internal assessment and carries 100 marks. Final assessment shall be done by two examiners; one examiner will be a senior faculty from the same department.

Continuous internal assessment: 100 marks

Performance in regular laboratory experiments: 70 marks

Final assessment/ laboratory test: 30 marks

f) Industry Elective Course

Engineering students frequently aspire to work in areas and domains that are key topics in the industry. There are concerns by recruiters that skill sets of engineering students do not match with the Industry requirements, especially in the field of latest topics.

Industry knowledge aids in the bridge building process between academic institutions and industry. It also aids students in expanding their knowledge and innovating by allowing them to create something new. Core engineering courses provide students with a strong foundation. Evolving technology necessitates new methods and approaches to progress, prosperity, and the inculcation of problem-solving techniques. Industry knowledge will enable the students to deal with any scenario more effectively, thus fulfilling the current industry demands.

Rapid technological advancements have resulted in a massive revival in the way engineering works in the industry. Projects necessitate the integration of knowledge and abilities from a diverse variety of engineering specialties, with the barriers between them becoming increasingly blurred.

Students can choose courses offered by Industries that cover a wide range of highly relevant topics such as artificial intelligence, internet of things, big data, automation, and other relatable courses.

IEC will be evaluated out of 100 marks; 50 marks for CIA and 50 marks for ESE.

Continuous internal assessment: 50 marks

The continuous internal evaluation will be done by the expert in the Industry handling the course, and the coordinator from the college.

Micro project/ Course based project: 30 marks

Course based task/Seminar/Quiz: 10 marks

Continuous assessment Test (CAT), 1 No: 10 marks

(CAT shall include minimum 60% of the syllabus)

End Semester Examination: 50 marks

ESE will be conducted by the CoE using the question paper provided by the industry. Duration of the examination shall be 180 minutes.

The question paper will contain 7 questions with minimum one question from each module, having 10 marks for each question. Students shall answer any five questions. Evaluation of the answer scripts will be done by the expert in the Industry handling the course or the coordinator from the college under the expert's guidance.

g) Skill/ Ability Enhancement Course

SAEC are online MOOC of 12 weeks duration and shall be considered only if it is conducted by the agencies namely AICTE/ NPTEL/ SWAYAM/ NITTTR. The course should have a

proctored/ offline end semester examination. Students can do the SAEC credited in M2 according to their convenience from their first semester, but shall complete it by their second semester. Students can do the SAEC credited in M3 according to their convenience from their first semester, but shall complete it by their third semester. The list of MOOC must be those approved by the concerned Board of studies, from which the students can choose their courses. A course may be approved only if at least 70% of the course content matches with the area/ stream of study. The course shall not be considered if its content has more than 50% of overlap with a core/ elective course in the concerned discipline or with an open elective.

A credit of 3 and a grade point of 10 will be awarded to all students whoever successfully completes the SAEC credited in M3. Marks/ GPA awarded to the other SAEC shall be used for SGPA/CGPA computation.

h) Mini Project

Mini project helps to strengthen the understanding of the fundamentals through application of theoretical concepts, and to boost their skills and widen the horizon of thinking. The ultimate aim of an engineering student is to resolve a problem by applying theoretical knowledge. Doing more projects enhances problem solving skills. The Mini project ensures preparedness of students to undertake their project work in M3 and M4. Students should identify a topic of interest in consultation with his/her PG Programme Coordinator. They should demonstrate the novelty of the project through the results and outputs. This mini project work is assessed in three evaluations, two interim evaluations and a final evaluation. The evaluations will be done by a committee comprising of Project Coordinator, Two senior faculty members in the department, and the student's Project Supervisor

Final evaluation will be conducted only if the Interim project report approved by the student's supervisor is submitted. The Plagiarism level in the report should be ≤ 25%, assessed based on the overall similarity index given by Turnitin licensed to the College.

Mini Project will be evaluated out of 100 marks under CIA, and has no ESE.

a) First evaluation:

Evaluation committee: 20 marks

Literature Survey: 7 marks

Objectives and Methodology: 7 marks

Clarity of presentation: 6 marks

b) Second evaluation:

Evaluation committee: 20 marks

Design: 7 marks

Implementation plan: 5 marks

Expected results: 8 marks

c) Final evaluation: 60 marks

a) Supervisor/ Guide: 10 marks

Log book and Regularity: 5 marks

Overall evaluation of the project work: 5 marks

b) Evaluation committee: 50 marks

Demonstration of functionality/ specifications: 20 marks

Level of completion: 5 marks

Clarity of presentation: 5 marks

Knowledge on the project work: 5 marks

Interim project report:

Technical content: 5 marks

Adequacy of references: 5 marks

Templates followed: 5 marks

i) Project

The students must carry out the project work either in the college or in any CSIR/ industrial R&D organization/ any other reputed Institute which have facilities to carry out project work in the proposed area.

Project work outside the College:

For doing project work outside the college, the following conditions are to be met:

- They have successfully completed the course work prescribed in the approved curriculum up to the second semester.
- The student has to get prior approval from the DLAC.
- Students availing this facility should continue as regular students of the College.
- Facilities required for doing the project work shall be available in the Organization/ Industry. A certificate stating 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.
- The student should have an external as well as an internal supervisor. The internal supervisor should belong to the college and the external supervisor shall be a Scientist or Engineer from the Institution/ Industry/ R&D organization with which the student proposes to do his project work. The external supervisor shall be with a minimum Post graduate degree in the related area.
- The MOOC must be completed as per the curriculum requirements:
- 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.
- The external supervisor is to be preferably present during all the stages of evaluation of the project.

Internship leading to Project:

Students who complete their internship in M3 at some reputed organization are allowed to continue their work as project in their fourth semester, after getting approval from the DLAC.

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 project. Once accepted, they will be permitted to complete their project in that organization (where they have successfully completed their internship) during their fourth semester.

Project 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 the second semester (FE status students are not permitted) prescribed in the approved curriculum. The project work can be done during a later period either in the organization where they work if it has R & D facility, or in the College. Such students shall submit an application with details (copy of employment offer, and the plan of completion of their project) to the Dean (PGSR) through the HoD. When the student plans to do the project work in the organization with R & D facility where they are employed, they shall submit a separate application with the following details:

- Name of R & D Organization/Industry
- Name and designation of an external supervisor from the proposed organization/ industry (a scientist or engineer with a minimum post graduate degree in the related area), along with his profile, and consent letter.
- Name and designation of a faculty member of the College as internal supervisor, and his/her consent letter.
- Letter from the competent authority from the Organization/ Industry granting permission to do the project work.
- Details of the proposed project work along with the work plan for completion of the project.

DLAC will scrutinize the proposal and forward to CLAC for approval.

When a student does his project work along with the job in the organization (with R & D facility) where they are employed, the project work shall be completed in four semesters (two semesters of dissertation work along with the job may be considered as equivalent to one semester of dissertation work at the college). He should complete the M. Tech programme within four years from the date of admission as per the regulation. Extensions may be granted based on requests from the student and recommendation of the supervisors. Method of assessment of the project will be the same as in the case of regular students.

Evaluation of Project (Phase I) in M3

Project (Phase I) will be evaluated out of 100 marks under CIA, and has no ESE. There will be two evaluations (first evaluation and final evaluation). The assessment shall be done by the student's Project Supervisor, and a committee comprising of Project Coordinator, two senior faculty members in the department, and the student's Project Supervisor. Project Coordinator shall enter the marks in the CoE portal.

Final evaluation will be conducted only if the student has submitted the Interim project report approved by the Supervisor, and Plagiarism level in the Interim project report is ≤25%.

1) **First evaluation: 30 marks**

Project Supervisor: 10 marks

i. Progress of work: 5 marks
(Literature Survey, Objectives, Methodology)

ii. Log book and Regularity: 5 marks

Evaluation committee: 20 marks

i. Topic, Objectives: 5 marks

ii. Methodology and Implementation plan for the work in M3:10 marks

iii. Clarity in presentation: 5 marks

2) <u>Final evaluation: 70 marks</u>

Project Supervisor: 25 marks

i. Progress of work: 15 marks

ii. Log book and Regularity: 5 marks

iii. Interim project report: 5 marks

Evaluation committee: 45 marks

i. Demonstration of work completed: 15 marks

ii. Presentation and Viva voce: 10 marks

iii. Implementation plan of work in M4: 5 marks

iv. Interim project report: 15 marks
Technical content: 10 marks
Adequacy of references and
Templates followed: 5 marks

<u>Evaluation of Project (Phase II) in M4/ Project in M3 or M4</u>

The evaluation of Project (Phase II) has CIA for 100 marks, and ESE for 100 marks. The continuous internal assessment is done under two evaluations (first evaluation and final evaluation), by the student's Project Supervisor, and a committee comprising of Project Coordinator, two senior faculty members in the department, and the student's Project Supervisor. Project Coordinator shall enter the marks in the CoE portal.

Final evaluation will be conducted only if the student has submitted the project report approved by the Supervisor, and Plagiarism level in the project report is ≤25%.

<u>Continuous internal assessment: 100 marks</u>

1) <u>First evaluation: 40 marks</u>

Project Supervisor: 15 marks

i. Progress of work: 10 marks
(Experimentation and results)

ii. Log book and Regularity: 5 marks

Evaluation committee: 25 marks

i. Demonstration of work completed: 15 marks

ii. Presentation and Viva: 10 marks

2) Final evaluation: 60 marks

Project Supervisor: 15 marks

i. Progress of work: 10 marks
(Quality and quantum of work)

ii. Project report: 5 marks

Evaluation committee: 45 marks

i. Demonstration of work completed: 10 marks

ii. Presentation and viva: 10 marks

iii. Project report: 10 marks
Technical content: 5 marks
Adequacy of references: 5 marks

iv. Paper publication: 15 marks
(Published/accepted for publication in a journal/conference)

End semester examination (Viva-voce examination): 100 marks

The ESE will be done by a committee that comprises of the Project Coordinator, an external expert (from industry or research/academic institute), and the student's Project Supervisor

Each department must submit a panel of external experts to Dean (PGSR), as per the academic calendar. The minimum qualification requirement for an external examiner is M.Tech. The number of experts to be submitted is one more than number of students divided by 6 (rounded to the next integer). Honorarium for the external expert will be as fixed by the College.

The Project coordinator will enter the ESE marks in the CoE portal.

Marks Distribution for Viva-voce examination

i. Innovation & originality: 15 marks
(Introduction, Recent and related literature, Scope of the work, Objectives)

ii. Implementation and execution: 20 marks
(Methodology and work plan, Results and discussions, Quality of work done)

iii. Project Documentation: 20 marks
(Introduction, Problem Statement , Literature review, Methodology, Results and discussions, Conclusions, Future work, References)

iv. Presentation and Defense: 40 marks
(Clarity and effectiveness of presentation, Ability to explain the project objectives,

Methodology and Findings, Handling questions and providing satisfactory answers)

v. Publication: 5 marks
(Published/accepted for publication in a journal/conference)