

REGULATIONS FOR THE M.TECH PROGRAMMES OFFERED BY THE UNIVERSITY DEPARTMENTS / SCHOOLS

The following regulations are made applicable to all the Full time and Part time M.Tech programmes offered by the Departments / Schools of the University with effect from 2016 admissions.

1. M.Tech Programme

The Full time M.Tech programmes offered by the Departments / Schools of the University shall be of four semesters duration spanning over a period of two academic years; wherein the first two semesters will include lectures, laboratory work, and seminars. The student will devote the third and fourth semesters on a project work related to a relevant area of the specialization either in the Department / School or in an industrial / research / academic institution outside the University.

The Part time M.Tech programme in the University shall be of six semesters duration spanning over a period of three years; wherein the first four semesters will include lectures, laboratory work / seminars. The student will devote part of fourth semester and the fifth and sixth semesters on a project work related to a relevant area of the specialization either in the Department or in collaboration with an industrial / research / academic institution outside the University.

1.1 Branches of Study / Specialization

Sl.No.	Branch of study /specialization	Department / Division / School offering the programme	Full time / Part time
1.	Atmospheric Science	Department of Atmospheric Sciences	Full time
2.	Engineering Statistics	Department of Statistics	Full time
3.	Ocean Technology	Department of Physical Oceanography	Full time
4.	Industrial Catalysis	Department of Applied Chemistry	Full time
5.	Polymer Technology	Department of Polymer Science and Rubber Technology	Full time
6.	Computer Aided Structural Analysis & Design	Department of Ship Technology	Full time
7.	Opto-Electronics and Laser Technology	International School of Photonics	Full time
8.	Electronics (with specialization in Digital Electronics, Microwave &	Department of Electronics	Full time

	Radar Electronics)		
9.	Computer and Information Science	Department of Computer Science	Full time
10.	Software Engineering	Department of Computer Science	Full time
11.	Computer Science with specialization in Embedded Systems	Department of Computer Science	Part time
12.	Marine Biotechnology	School of Environmental Studies (offered at NCAAH)	Full time
13.	Civil Engineering (with specialization in Geotechnical Engineering)	Division of Civil Engineering School of Engineering	Full time
14.	Mechanical Engineering (with specialization in Thermal Engineering)	Division of Mechanical Engineering School of Engineering	Full time
15.	Electronics and Communication Engineering (with specialization in Wireless Technology)	Division of Electronics Engineering School of Engineering	Full time
16.	Software Systems	Division of Information Technology School of Engineering	Full time
17.	Industrial Safety (Specialization - HSE Management)	Division of Safety and Fire Engineering School of Engineering	Full time
18.	Computer Science and Engineering (with specialization in Network Computing)	Division of Computer Engineering School of Engineering	Full time
19.	Marine Engineering	KunjaliMarakkar School of Marine Engineering	Full time
20.	Civil Engineering – Construction Engineering & Management	Division of Civil Engineering School of Engineering	Part time
21.	Mechanical Engineering – Production Engineering	Division of Mechanical Engineering School of Engineering	Part time
22.	Chemical Engineering – Process Engineering	Division of Chemical Engineering School of Engineering	Part time
23.	Electrical & Electronics Engineering – Power Electronics	Division of Electrical Engineering School of Engineering	Part time

Comment [A1]:

A student is admitted to the course as per the eligibility criteria prescribed below:

1.2. Eligibility for admission

1.2.1. The specific eligibility criteria for the various full time and part time programmes are given below.

1. Atmospheric Science

1.M.Sc. Degree or its equivalent in Meteorology, Oceanography, Mathematics, Physics, Space Physics with a first class (60%) marks from any recognized University or Institution 2. A valid GATE score or a pass in the joint UGC CSIR Test (NET) for JRF. 3. In the absence of applicants with GATE / NET for JRF, others can also be considered on the basis of the performance in DAT.

2. Engineering Statistics

1.B.Tech or equivalent Degree or AMIE in any discipline or AMIChE with first class (60%) from any recognized University or Institution 2. A valid GATE score. 3. In the absence of applicants with GATE others can also be considered on the basis of the performance in DAT.

3. Ocean Technology

1. M.Sc. Degree in Oceanography/Physics/Marine Geology/Meteorology/ Marine Geophysics/Environmental Sciences or M.Sc (Tech) Degree in Marine Geophysics or B.Tech or equivalent Degree/AMIE in Civil Engineering/Environmental Sciences with 60% marks from any recognized University or Institution 2. A valid GATE score in any of the subjects mentioned above as the second paper.

3. In the absence of applicants with GATE, others can also be considered on the basis of the performance in DAT.

4. Industrial Catalysis

1.M.Sc.Degree in Chemistry/Applied Chemistry or any other degree recognized as equivalent with at least a First Class (60%) marks from any recognized University or Institution with a valid GATE score.

3. In the absence of applicants with GATE , others can also be considered on the basis of the performance in DAT.

5. Polymer Technology

1.B.Tech or equivalent degree/AMIE in Polymer Science and Rubber Technology/Chemical Engineering/Technology or M.Sc. Polymer Chemistry/ M.Sc. Chemistry with Polymer Chemistry as specialization with a First Class (60%) marks from any Recognized University or Institution.

6. Computer Aided Structural Analysis & Design

B.Tech or Equivalent degree in Naval Architecture and Ship Building/Civil Engineering/Mechanical Engineering with first class (60%) marks from any Recognized University or Institution.

7. Opto-Electronics and Laser Technology

1.Master's Degree in Physics/Electronics/Photonics/ B.Tech or BE Degree in Electronics & Communication Engineering/ Electronics Engineering/Electrical Engineering /Electrical and Electronics Engineering with a First Class (60%) from any recognized University or Institution

2. A valid GATE score in concerned branch of study

3. If sufficient number of candidates with GATE score in concerned branch of study are not available, candidate with GATE score in instrumentation will be considered. If sufficient numbers of GATE score holders are not available a pass in DAT is sufficient.

8. Electronics (with specialization in Digital Electronics, Microwave and Radar Electronics)

1.B.Tech or Equivalent Degree/AMIE/AMIETE in Electronics and Communication Engineering/Electrical Engineering/Electronics and Instrumentation or M.Sc. Degree in Electronics/Physics (with Electronics as specialization) with a First Class (60%) marks from any recognized University or Institution

2. A valid GATE score in Electronics, Electronics and Communication Engineering branch of study

3. If sufficient numbers of candidates are not available in category 2 above, candidates GATE score in Instrumentation, Electrical and Electronics Engineering Electrical Engineering or Physics will be considered. In the absence of the GATE qualified candidates. Non-GATE candidates can be admitted on the basis on the basis of DAT.

9. Computer and Information Science

1. B.Tech or equivalent degree/AIMIETE/AMIE in the branch of Computer Science or Information Technology or Electronics & Communication or MCA with a First class (60% marks) applicable to all the above, from any recognized university or institution.

2. A Valid GATE score in the subject "Computer Science & Information Technology".

10. Software Engineering

1. B.Tech or equivalent degree/AIMIETE/AMIE in the branch of Computer Science or Information Technology or Electronics & Communication or MCA with a First class (60% marks) applicable to all the above, from any recognized university or institution.

2. A Valid GATE score in the subject "Computer Science & Information Technology"

11. Computer Science with specialization in Embedded Systems

- i) First Class B.Tech in Computer Science & Engg. / Electronics Engg. / IT / Electrical Engg. Or equivalent branches or MCA with 60% marks or equivalent CGPA.
- ii) Minimum one year experience in Industry / University / Institutions recognised by appropriate statutory bodies.

12. Marine Biotechnology

B.Tech/BE in Chemical Engineering, Biochemical Engineering, Industrial Biotechnology, Leather Biotechnology, Chemistry/Biotechnology, Biomedical Engineering, B.Pharm., Chemical Technology or M.Sc.in Biotechnology, Marine Biotechnology, Life Sciences, Botany/Zoology/Biochemistry, Microbiology/Genetics, Biophysics, Microbial Genetics and Bioinformatics, Marine Biology/Aquatic Biology and Fisheries/Environmental Biotechnology/Mariculture with 60% marks or Equivalent CGPA from any recognized Indian or Foreign

University. For admission to M.Tech Marine Biotechnology GATE score is not considered. Selection of candidates is done by JNU on behalf of Department of Biotechnology, Government of India.

13. Civil Engineering with specialization in Geotechnical Engineering

a) Shall have passed B.Tech/BE/B.Sc Engineering Degree Examination in Civil Engineering branch with a minimum 60% marks from any University in Kerala or an examination of any other University/Institution accepted by this University as equivalent thereto.

b) The candidates who have passed sections A&B examinations conducted by the Institution of Engineers (India) – AMIE in Civil branch shall be eligible.

14. Mechanical Engineering with specialization in Thermal Engineering

Shall have passed B.Tech/BE/B.Sc Engineering Degree Examination in Mechanical, Automobile, Aerospace, Aeronautical branches with a minimum of 60% marks from any University in Kerala or an examination of any other University/Institution accepted by this University as equivalent thereto. Candidates who have passed sections A and B examinations conducted by the Institution of Engineers (India) – AMIE or similar equivalent examinations in the branches mentioned above with a minimum of 60% marks shall also be eligible.

15. Electronics and Communication Engineering with specialization in Wireless Technology

a) Shall have passed B.Tech/BE/B.Sc Engineering Degree Examination in Electronics or Electrical and Electronics or Electronics and Communication branch with a minimum 60% marks from any University in Kerala or an examination of any other University/Institution accepted by this University as equivalent thereto.

16. Software Systems

- a) Shall have passed B.Tech/BE/B.Sc Engineering Degree Examination in Information Technology/Computer Science and Engineering/Computer Engineering/Biomedical Engineering/Electronics and Communication /Electronics/Electrical and Electronics branch with a minimum of 60% marks or CGPA 6.5 in 10-point scale from any University of Kerala or an examination of any other University/Institution accepted by this University as equivalent thereto.

17. Industrial Safety (Specialization - HSE Management)

- a) B.E/B.Tech/B.Sc. Engg. in Aerospace Engineering/Chemical Engineering/Civil Engineering/Electrical Engineering/Electrical and Electronics Engineering/Fire Engineering/Mechanical Engineering/Metallurgical Engineering/Production Engineering/Safety & Fire Engineering.
- b) Two seats shall be reserved for candidates with B.Tech Degree in Safety & Fire Engineering/B.E Degree in Fire Engineering. The candidates are selected through Departmental Admission Test (DAT). If such candidates are not available, these two seats shall be filled as per normal rules.

18. Computer Science and Engineering (with Specialization in Network Computing)

- a) B.Tech or equivalent Degree/AMIETE/ AMIE in Computer Science and Engineering/Information Technology/Electronics and Communication Engineering with a minimum of 60% marks or CGPA 6.5 in 10 point scale from any recognized University in Kerala or any other University/Institution accepted by this University as equivalent thereto.
- b)A valid GATE score.
- c) In the absence of sufficient number of candidates with GATE score, candidate without GATE score shall also be considered based on the performance in the Departmental Admission Test (DAT).

19. Marine Engineering

1. Shall have passed B.Tech/BE/BS.Degree in Marine Engineering or B.Tech/B.Sc.(Engg.) Degree in Mechanical Engineering or B.Tech Degree in Naval Architecture and Ship Building with a minimum of 60% marks or an examination of any other University/Institution accepted by this University as equivalent there to with 60% marks. Preference will be given to those who have passed MEO class IV examination or a minimum of 2 years professional experience in Ship Building/Ship Repair Yard/Ship Design Office/Indian Navy.

4 seats in the programme shall be reserved for Marine engineers and 3 seats shall be reserved for sponsored candidates satisfying the above mentioned eligibility requirements.

20. Civil Engineering – Construction Engineering and Management,

21. Mechanical Engineering – Production Engineering

22. Chemical Engineering – Process Engineering and

23. Electrical & Electronics Engineering – Power Electronics

a) Shall have passed B.Tech / B.Sc (Engg.) / B.E degree examination in the respective branch with a minimum of 50% marks from any University in Kerala or an examination of any other University / Institution accepted by this University as equivalent thereto.

b) Applications from candidates who have passed B.Tech / B.Sc (Engg.) / BE degree examination in allied branches of Engineering / Technology with a minimum of 50% marks may also be considered in the absence of sufficient number of candidates from the respective branch of engineering. The suitability of such candidates for the course may be assessed by an admission committee constituted by the Head of the Department / School.

c) Candidates who have passed sections A and B of the Associate Membership/ Graduate Membership Examinations in respective branches conducted by the Institution of Engineers (India), Institution of Electronics and Telecommunication Engineers and Indian Institute of Chemical Engineers with a minimum of 50 percent marks are also eligible for admission if they have an engineering diploma or a basic degree in science.

d) A minimum of 2 years of professional experience in the concerned field is required after acquiring the qualifying degree. This may be relaxed if sufficient number of candidates with the minimum prescribed experience are not available.

- e) Admission will be based on the rank list prepared by giving due weightage to qualifying degree marks (50%), admission test conducted by the department (40%), and number of years of experience after obtaining the degree (weightage at the rate of 1% per year of experience subject to a maximum of 10%).

1.2.2 In the case of full time programmes listed under Sl. No. 1 to 18 above, preference will be given to candidates having a valid GATE score in the concerned branch of study. In case such candidates are not available, candidates with GATE score in a related branch will be considered.

In the absence of sufficient candidates with valid GATE score, admission will be made on the basis of a Departmental Admission Test (DAT).

1.2.3 Candidate for sponsored quota must have a minimum experience of three years in the relevant field and must be sponsored by University or Industry/Teaching/Research Organizations of Centre/State Government/or by Private Engineering Colleges approved by AICTE. Maximum age of sponsored candidates is fixed as 40 years as on 1st of August of the year of admission. Also, a special fee equivalent to the contingent grant received for GATE qualified candidates will be levied on the sponsored candidates.

1.3 Course Structure

1.3.1 The course content of M.Tech programmes shall consist of theory courses, practical courses, seminar, industrial training (optional) and project work.

1.3.2 The curriculum for the first two semesters shall generally consist of theory courses, practical courses and seminar.

1.3.3 Each theory course will carry three or four credits and each practical course / seminar will have one or two credits.

1.3.4 The number of credits for the project work in third and fourth semesters shall be in the range of 15 – 18 each.

1.3.5 The minimum number of credits to be earned by a student for the award of the M.Tech degree shall be 72 subject to the condition that the candidate successfully completes all the core and elective courses prescribed by the Department / School.

1.4 Mode of Evaluation

1.4.1 A student would be considered to have progressed satisfactorily at the end of a semester if he/she has a minimum of 75 % attendance subject to the provision in clause (3) of the regulations. In the case of part-time students, the Vice-Chancellor shall have the power to condone shortage of attendance up to 10 percent on medical grounds

on the recommendations of the Head of Division / Department.
However such condonation for shortage of attendance shall be given only once during the entire course.

- 1.4.2 The student shall be evaluated continuously throughout the semester and marks shall be awarded on the basis of tests / assignments as detailed below :

A maximum of 20 marks as awarded for the assignments given to the students by the concerned teacher.

There shall be two class tests and an end semester examination.

The first class test carries 20 marks and will be based on the portions of the syllabi covered till then.

The second class test also carries 20 marks and will be based on the portions covered till then after the first class test.

The end semester examination will be for 40 marks and shall contain questions from the entire syllabi of the course.

The duration of the end semester examination shall be three hours.

- 1.4.3 The results of each subject in a semester shall be finalized by the concerned faculty member within 10 days from the last date of the end semester examination and the marks and grades obtained by the candidate in each subject shall be displayed on the notice board with the approval of the course-coordinator and head of the division/ department / school concerned.
- 1.4.4 The pass minimum in a subject is 50 %. If a candidate fails to secure 50% marks, he/she shall be deemed to have failed in the subject.
- 1.4.5 A makeup examination for the end semester examination shall be conducted for the failed candidates within 10 days from the date of display of the marks/grades. Such examination shall carry questions from the entire portions of the syllabus and the weightage shall be only 75%. It shall substitute one of the three tests that has fetched the least marks.
- 1.4.6 The final marks / grade of the candidate taking into account his/her performance in the makeup examination and periodic tests and assignments shall be finalized within 5 days from the date of the makeup examination. A candidate securing a minimum 50 percent marks shall be considered to have passed in that subject.
- 1.4.7 If the candidate fails to meet the minimum requirement for pass even after two attempts, he / she shall have to repeat the subject at the next available chance.

- 1.4.8 A pass in the course will entitle the student to acquire the number of credits allotted for that particular course. (for the details of number of credits, please refer to the course structure.)
- 1.4.9 A student shall acquire a minimum of 36 credits in the first two semesters before he/she registers for third semester. A student shall complete the M.Tech programme in 8 (eight) consecutive semesters in the case of full time programme and 10 (ten) consecutive semesters in the case of part time programme by acquiring the minimum total credit requirement of 72.
- 1.4.10 A student who wishes to take up professional employment after completing the second semester shall obtain permission from the Head of the Department/School. The student will be permitted to carry out the project work in the institution / organisation where they are employed on production of a certificate from the Head of that institution/organisation to the effect that the student is permitted to carry out the project at the institution/organisation.

Such candidates shall carry out the project work under the joint supervision of a project guide from the Department/School and an external guide from the Institution/Organization concerned. The Department / School Council shall verify the academic/ research credentials of the proposed external guide before granting permission.

In the case of students who propose to carry out their project work in National Laboratories on full time basis, the provision regarding having a project guide from the Department/School concerned may be exempted by the Department / School Council, if the situation warrants.

This clause will be applicable to the sponsored candidates also if they wish to carry out their project work in their parent organisation.

- 1.4.11 Project evaluation shall be done at the end of III and IV semesters in the case of full time programmes and at the end of V and VI semesters in the case of part time programmes.

The evaluation at the end of III Semester (Full time)/ V Semester (Part time) shall be conducted by an examination committee consisting of the head of the department / school / division, a senior teacher nominated by the head and the project guide.

At the end of IV or VI semester, the students will have to submit a dissertation on his / her project work. The dissertation shall have to be submitted as per the guidelines given in Appendix I.

Three bound copies along with a soft copy of the dissertation shall be submitted to the Head of the Department/School within the last date prescribed by the Department / School for the purpose

1.4.12 The dissertation will be evaluated by an examination committee consisting of the head of the department / school / division, another senior teacher of the department/school /division concerned nominated by the Head of the Department / School, and the project guide. However an external examiner may also be included in the examination committee with the approval of the Department / School Council. The candidate shall make an open defence of his/her dissertation which will be followed by a viva-voce examination.

1.4.13 For the purpose of assessment, the performance of a student in the project dissertation may be divided into the following sub components:

At the end of III semester (Full time) / V Semester (Part time)

Assessment by the project guide (based on periodic assessment of the work of the candidate) -	50%
Assessment by the examination committee -	50%

At the end of IV semester (Full time) / VI Semester (Part time)

Assessment by the project guide (based on periodic assessment of the work of the candidate) -	50%
Assessment by the examination committee-	50%

1.5 Classification

The following grading system is adopted for all the courses. The following grades will be awarded based on the overall performance in each subject.

<u>Range of Marks</u>	<u>Grades</u>	<u>Weightage</u>
90 % and above	S- Outstanding	10
(80-89)	A- Excellent	9
(70-79)	B- Very Good	8
(60-69)	C- Good	7
(50-59)	D- Satisfactory	6
Below 50%	F- Failed	0

Overall performance at the end of the semester will be indicated by Grade Point Average (GPA) calculated as follows:

$$\text{GPA} = \frac{G_1C_1 + G_2C_2 + G_3C_3 + \dots + G_nC_n}{C_1 + C_2 + C_3 + \dots + C_n}$$

Where 'G' refers to the grade weightage and 'C' refers to the credit value of corresponding course undergone by the student.

At the end of the final semester, Cumulative Grade Point Average (CGPA) will be calculated based on the above formula.

Classification for the Degree will be as follows :

<u>Classification</u>	<u>CGPA</u>
First class with distinction	8 and above
First class	7 and above
Second class	6 and above

2.0 Declaration of Results

An examination committee consisting of the Head of the Department (Chairperson), a senior teacher/Head of the Division concerned and the Course Coordinator shall scrutinise the marks and grades obtained by the candidates and finalise the results. The examination committee will be constituted by the Head of the department/school. The final marks will be reported to the University for Tabulation and declaration of results. The University shall issue mark lists at the end of each semester.

2.1 Review of Question Papers and Valuation of answer books

At the end of each semester, the question papers set for class tests and end semester examination will be reviewed by the Department / School Council. The review report may be placed in the Board of Studies concerned for scrutiny.

2.2 Grievance Cell

The Departmental / School Council or a subcommittee nominated by the Council will act as the grievance cell for the redress of complaints from the students on the conduct of the class test, semester exam, and the valuation methodology. The student shall make such complaints to the Head of the Department / School within a week of the display of the marks/grades for a particular course on the Notice board of the Department / Division.

3.0 Leave for a Full time M.Tech student

3.1 A full time M.Tech student shall be entitled to the following kinds of leave during every academic year, counted from the date of commencement of the session concerned as prescribed in the academic calendar of the institute.

3.2 Any absence over and above the prescribed type of admissible leave shall entail deduction from the scholarship, beside other action as may be decided by the University.

Sl.No.	Leave	Maximum number of days	Sanctioning authority
1.	Casual Leave	5 days per semester subject to the condition that such leave will not be allowed for more than 3 days at a time. Casual leave cannot be combined with medical leave.	Head of the Department / School
2.	Medical Leave	3 days per semester	Head of the Department / School on the basis of a Medical Certificate from a registered Medical Practitioner certified by the University Medical Officer.

4.0 Revision of Regulation and Curriculum

The University may from time to time, revise, amend or change the regulations, schemes of examinations and syllabus. In the case of students already undergoing the course, the change will take effect from the beginning of the following academic year after the changes are introduced and shall cover the part of the course that remains to be completed.

APPENDIX-I

GUIDELINES FOR PREPARATION OF M.Tech DISSERTATION

Preamble

While utmost attention must be paid to the content of the dissertation report, which is being submitted in partial fulfilment of the requirements of the M.Tech degree, it is imperative that a standard format be prescribed. The same format shall also be followed in preparation of the final soft copies to be submitted to the Library in future.

1. Organisation of the Dissertation

The dissertation report shall be presented in a number of chapters, starting with Introduction and ending with Summary and Conclusions. Each of the other chapters will have a precise title reflecting the contents of the chapter. A chapter can be subdivided into sections, subsections and sub-subsection so as to present the content discretely and with due emphasis. When the work comprises two or more mutually independent investigations, the dissertation report may be divided into two or more parts, each with an appropriate title. However, the numbering of chapters will be continuous right through, for example Part 1 may comprise Chapters 2 - 5, Part 2, Chapters 6 - 9.

1.1 Introduction

The title of Chapter 1 shall be Introduction. It shall justify and highlight the problem posed, define the topic and explain the aim and scope of the work presented in the dissertation report. It may also highlight the significant contributions from the investigation.

1.2 Review of Literature

This shall normally form Chapter 2 and shall present a critical appraisal of the previous work published in the literature pertaining to the topic of the investigation. The extent and emphasis of the chapter shall depend on the nature of the investigation.

1.3 Report on the present investigation

The reporting on the investigation shall be presented in one or more chapters with appropriate chapter titles. Due importance shall be given to experimental setups, procedures adopted, techniques developed, methodologies developed and adopted. While important derivations/formulae should normally be presented in the text of these chapters, extensive and long treatments, copious details and tedious information, detailed results in tabular and graphical forms may be presented in Appendices. Representative data in table and figures may, however, be included in appropriate chapters. Figures and tables should be presented immediately following their first mention in the text. Short tables and figures (say, less than half the writing area of the page) should be

presented within the text, while large table and figures may be presented on separate pages. Equations should form separate lines with appropriate paragraph separation above and below the equation line, with equation numbers flushed to the right.

1.4 Results and Discussion

This shall form the penultimate chapter of the dissertation report and shall include a thorough evaluation of the investigation carried out and bring out the contributions from the study. The discussion shall logically lead to inferences and conclusions as well as scope for possible further future work.

1.5 Summary and Conclusions

This will be the final chapter of the dissertation report. A brief report of the work carried out shall form the first part of the Chapter. Conclusions derived from the logical analysis presented in the Results and Discussions Chapter shall be presented and clearly enumerated, each point stated separately. Scope for future work should be stated lucidly in the last part of the chapter.

1.6 Appendix

Detailed information, lengthy derivations, raw experimental observations etc. are to be presented in separate appendices, which shall be numbered in Roman Capitals (e.g. "Appendix IV"). Since reference can be drawn to published/unpublished literature in the appendices these should precede the "Literature Cited" section.

1.7 Literature Cited

This should follow the Appendices, if any, otherwise the Summary and Conclusions chapter. The candidates shall follow the style of citation and style of listing in one of the standard journals in the subject area consistently throughout his/her report. However, the names of all the authors along with their initials and the full title of the article/monogram/book etc. have to be given in addition to the journals/publishers, volume, number, pages(s) and year of publication. Citation from websites should include the names(s) of author(s) (including the initials), full title of the article, website reference and when last accessed. Reference to personal communications, similarly, shall include the author, title of the communication (if any) and date of receipt.

1.8 Publications by the candidate

Articles, technical notes etc. on the topic of the dissertation report published by the candidate may be separately listed after the literature cited. This may also be included in the contents. The candidates may also include reprints of his/her publications after the literature citation.

1.9 Acknowledgements

The acknowledgments by the candidate shall follow the citation of literature, signed by him/her, with date.

2. DISSERTATION FORMAT

2.1 Paper

2.1.1 Quality: The dissertation report shall be printed / photo copied on white bond paper, whiteness 95% or above, weight 70 gram or more per square meter.

2.1.2 Size: The size of the paper shall be standard A4; height 297 mm, width 210 mm.

2.1.3 Type Setting, Text Processing and Printing: The text shall be printed employing Laserjet or Inkjet printer, the text having been processed using a standard text processor. The standard font shall be Times New Roman of 12 pts with 1.5 line spacing.

2.1.4 Page Format: The Printed Sheets shall have the following written area and margins:

Top Margin 15 mm

Head Height 3 mm

Head Separation 12 mm

Bottom Margin 22 mm

Footer 3 mm

Foot Separation 10 mm

Text Height 245 mm

Text Width 160 mm

When header is not used the top margin shall be 30 mm.

Left and Right Margins

Single sided

Left Margin 30mm

Right Margin 20 mm

2.1.5 Pagination: Page numbering in the text of the report shall be Hindu Arabic numerals at the centre of the footer. But when the candidate opts for header style the page number shall appear at the right and left top corner for the odd and even number pages, respectively. Page number "1" for the first page of the Introduction chapter shall not appear in print, only the second page will bear the number "2". The subsequent chapters shall begin on a fresh page. When header style is chosen the first page of each chapter will not have the header and the page number shall be printed at the centre of the footer. Pagination for pages before the Introduction chapter shall be in lower case Roman numerals, e.g., "iv".

2.1.6 Header: When the header style is chosen, the header can have the Chapter number and Section number (e.g., Chapter 2, Section 3) on even numbered page headers and Chapter title or Section title on the odd numbered page header.

2.1.7 Paragraph format: Vertical space between paragraphs shall be about 2.5 line spacing. The first line of each paragraph should normally be indented by five characters or 12mm. A candidate may, however, choose not

to indent if he/she has provided sufficient paragraph separation. A paragraph should normally comprise more than one line. A single line of a paragraph shall not be left at the top or bottom of a page (that is, no windows or orphans should be left). The word at the right end of the first line of a page or paragraph should, as far as possible, not be hyphenated.

2.2 Chapter and Section Format

2.2.1 Chapter: Each chapter shall begin on a fresh page with an additional top margin of about 75mm. Chapter number (in Hindu-Arabic) and title shall be printed at the centre of the line in 6mm font size (18pt) in bold face using both upper and lower case (all capitals or small capitals shall not be used). A vertical gap of about 25mm shall be left between the Chapter number and Chapter title lines and between chapter title line and the first paragraph.

2.2.2 Sections and Subsections: A chapter can be divided into Sections, Subsections and Sub-sub Sections so as to present different concepts separately. Sections and subsections can be numbered using decimal points, e.g. 2.2 for the second section in Chapter 2 and 2.3.4 for the fourth Subsection in third Section of Chapter 2. Chapters, Sections and Subsections shall be included in the contents with page numbers flushed to the right. Further subsections need not be numbered or included in the contents. The Section and Sub-Section titles along with their numbers in 5 and 4mm (16 and 14 pt) fonts, respectively, in bold face shall be flushed to the left (not centred) with 15 mm space above and below these lines. In further subdivisions character size of 3 and 3.5 with bold face, small caps, all caps and italics may be used for the titles flushed left or centred. These shall not feature in the contents.

2.2.3 Table / Figure Format: As far as possible, tables and figures should be presented in portrait style. Small size table and figures (less than half of writing area of a page) should be incorporated within the text, while larger ones may be presented on separate pages. Table and figures shall be numbered chapter wise.

For example, the fourth figure in chapter 5 will bear the number Figure 5.4 or Fig 5.4 Table number and title will be placed above the table while the figure number and caption will be located below the figure. Reference for Table and Figures reproduced from elsewhere shall be cited in the last and separate line in the table and figure caption, e.g. (after McGregor[12]).

3 Auxiliary Format

3.1 Binding: The evaluation copies of the dissertation report may be spiral bound or soft bound. The final hard bound copies to be submitted after the viva-voce examination will be accepted during the submission of dissertation report with the following colour specification:

M.Tech. Dissertation

3.2 Front Covers: The front covers shall contain the following details:

Full title of report in 6 mm 22 point's size font properly centred and positioned at the top. Full name of the candidate in 4.5 mm 15 point's size font properly centred at the middle of the page. A 40 mm dia replica of the Institute emblem followed by the name of department, name of the Institute

and the year of submission, each in a separate line and properly centred and located at the bottom of page.

3.2.1 Lettering: All lettering shall be embossed in gold.

3.2.2 Bound back: The degree, the name of the candidate and the year of submission shall also be embossed on the bound (side) in gold.

3.3 Blank Sheets: In addition to the white sheets (binding requirement) two white sheets shall be put at the beginning and the end of the report.

3.4 Title Sheet: This shall be the first printed page of the Dissertation and shall contain the submission statement: the Dissertation Report submitted in partial fulfilment of the requirements of the M.Tech Degree, the name and Roll No. of the candidate, name(s) of the Supervisor and Co-supervisor(s) (if any), Department, Institute and year of submission.

Sample copy of the 'Title Sheet' is appended (Specimen 'A').

3.5 Dedication Sheet: If the candidate so desires(s), he/she may dedicate his/her report, which statement shall follow the title page. If included, this shall form the page 1 of the auxiliary sheets but shall not have a page number.

3.6 Approval Sheet: In the absence of a dedication sheet this will form the first page and in that case shall not have a page number. Otherwise, this will bear the number two in Roman lower case "ii" at the centre of the footer. The top line shall be: Dissertation Approval for M.Tech

A sample copy of the Approval Sheet is appended (Specimen 'B')

3.7 Abstract: The 500 word abstract shall highlight the important features of the dissertation report and shall correspond to the electronic version to be submitted to the Library for inclusion in the website. The Abstract in the report, however, shall have two more parts, namely, the layout of the report giving a brief chapter wise description of the work and the key words.

3.8 Contents: The contents shall follow the Abstract and shall enlist the titles of the chapters, section and subsection using decimal notation, as in the text, with corresponding page number against them, flushed to the right.

3.8.1 List of Figures and Tables: Two separate lists of Figure captions and Table titles along with their numbers and corresponding page numbers against them shall follow the Contents.

3.9 Abbreviation Notation and Nomenclature: A complete and comprehensive list of all abbreviations, notations and nomenclature including Greek alphabets with subscripts and superscripts shall be provided after the list of tables and figures. As far as possible, generally accepted symbols and notation should be used.

Auxiliary page from dedication (if any) to abbreviations shall be numbered using Roman numerals in lower case, while the text starting from the Introduction shall be in Hindu Arabic.

The first pages in the both the cases shall not bear a page number.

3.10 A Declaration of Academic Honesty and Integrity: A declaration of Academic honesty and integrity is required to be included along with every dissertation report after the approval sheet. The format of this declaration is given in Specimen 'C' attached.

Specimen 'A': Title Sheet

(Title)

Dissertation Submitted in partial fulfilment of the requirements
of the degree of
Master of Technology

by

(Name of the Student)
(Roll No. _____)

Project Guide(s):

(Name of the Department / School / Division)
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

(Month and Year)

Specimen `B': Approval Sheet

This dissertation entitled (Title) by (Author Name) is recommended for the award of the Degree of Master of Technology.

Members of the Examination Committee (Name and Signature)

Date : _____
Place : _____

Specimen `C' – Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

(Signature)

(Name of the student)

(Roll No.)

Date: _____

Specimen `D' – Certificate

DEPARTMENT / SCHOOL OF -----

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

This is to certify that the dissertation work entitled “ -----
-----“ is a bonafide record of work carried out by Mr/Ms -----
----- (Roll No.), submitted to the Department / School of -----
-----, in partial fulfilment of the requirements for the award of the degree
of Master of Technology in “*name of the program*” at Cochin University of
Science and Technology, Kochi during the academic year -----.

Name and Signature of the Project Guide -----

Signature of Head of the Division / Department / School -----

Date: