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PREFACE

The present Academic Bulletin aims at giving a brief overview of the course structure as well as regulations for the various post graduate programmes offered in the University. We feel that this will enable the students to choose their electives according to their interest in the topic. The details of the faculty in each department along with their specialisations are also given in the text. As was done earlier, the information is organised faculty wise and departments within each faculty. Clarifications regarding any detail which is not included in the bulletin can be obtained from the concerned Head of the department. Further it may be noted that the rules and regulations are subject to changes, depending on subsequent decisions taken by the academic bodies.

The Academic Bulletin Committee is thankful to all the Directors of Schools/ Heads of Departments and University authorities for extending all sort of Co-operation in bringing out this bulletin. We would also like to place on record our appreciation to Smt. K. Jayalakshmi and Sri. K.G. Kiran Kumar who had rendered administrative help to bring out this bulletin.

Dr. C.K. Aanandan

Dr. P. Radhakrishnan

Dr. K.P. Narayanan

Dr. Jagathyraj V.P.

Dr. B.Pradeep (Convenor)

REGULATIONS FOR POST GRADUATE PROGRAMMES IN THE DEPARTMENTS/ SCHOOLS OF THE COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

1. SCOPE

- 1.1 These Regulations shall apply to all post graduate programmes conducted by the Departments/Schools of the Cochin University of Science and Technology excluding Ph.D., M. Phil and P.G. Diploma and Certificate Courses.
- 1.2 The provisions herein supersede all other Regulations unless otherwise provided.

2. DEFINITIONS

- 2.1. Academic Committee means the committee constituted by the Vice-Chancellor under this Regulation to monitor the running of the programme.
- 2.2. Core course means a course that the student admitted to a particular programme must successfully complete to receive the Degree and which cannot be substituted by any other course.
- 2.3. Elective course means a course, which can be substituted by equivalent courses from the same or other Departments/Schools.
- 2.4. Audited course will not accrue any credit.
- 2.5. Department/School means Departments/Schools instituted in the University as per Statutes and Act.
- 2.6. Levels of courses in these Regulations will generally mean:
First Level : undergraduate programmes
Second Level: all post graduate programmes (Master's Degree except M. Tech)
Third Level : M. Tech. courses
- 2.7. Semester and course credit system shall be followed.

3. ELIGIBILITY FOR ADMISSION

As per the Regulations prescribed by the University from time to time.

4. ADMISSION

As per the Regulations prescribed by the University from time to time.

5. COURSE REGISTRATION

- 5.1 Every department/School shall have Faculty Members as Students' Advisors. Each student at the time of seeking admission will be assigned to an Advisor by the Departmental Council. He/She will advise the student about the academic programme and counsel on, the choice of courses depending on the student's academic background and objective. The student shall then register for the courses he plans to take for the semester before the classes begin.

The Department offering any course shall prescribe the maximum number of students that can be admitted taking into consideration the facilities available. In any department preference shall be given to those students for whom the course is a core-course if the demand for registration is beyond the maximum prescribed. Every student has to complete the prescribed prerequisites for the course before registration. The student can drop out if

he feels that he has registered for more courses than he can handle within 20 days after the commencement of classes.

- 5.2 The University shall make available to all students a Bulletin listing all the courses offered in every semester specifying the credits, pre requisites, list of topics the course intends to cover, the instructor who is giving the course, the time and place of the classes for the courses and examination schedule. Each course shall have a code consisting of three characters denoting the Department and four digits of which first digit indicating the level of the course, second indicating the Semester and third and the fourth digits the serial number of the course. However, in such departments having more than 1 Masters programme of same level, the first 2 characters denote department and the third, the course of study.

6. COURSE STRUCTURE

- 6.1 Core courses should generally be offered by the Department/School concerned. Normally no course shall have more than four credits except in cases where only project/dissertation including seminars are involved in which case the minimum credit shall be sixteen.
- 6.2 Total number of credits for the core courses shall not exceed 60 for M.A. / M.Sc., 80 for MCA / MBA, 40 for M. Tech. and shall not be less than 48 for M.A. / M.Sc., 72 for MCA /MBA Programmes/ MIB and 36 for M. Tech.
- 6.3 The department council shall make recommendations on the core and elective courses including the detailed syllabus for each programme offered by the department to the University and approved by the concerned Board of Studies, Faculty and Academic Council. The Department Council shall have the freedom to design and introduce new electives and/or audited courses, to modify / redesign existing electives and to replace any existing electives with new or modified / redesigned electives to facilitate better exposure and training for the students. Prior approval from the Board of Studies and Academic Council is not required for such modifications in the electives, but shall be done only with the approval of the Academic Committee. Such changes shall be brought to the notice of the concerned bodies in the next meeting.
- 6.4 The general structure of the programme shall be as given below:

	MA/M Sc	MBA Full Time Programmes	MBA * Part Time	MCA
Programme duration	4 sem	4 sem	6 sem	6 sem
Accumulated minimum credits Required for successful Completion of the programme	72	87	87	108
Minimum attendance required	75 %	75 %	75 %	75 %

Note: * MBA (PT) programme has 6 semesters with the same content as the full time programme with 4 semesters

Each semester shall have a minimum of 90 working days and one credit shall be given for one-hour lecture or 3 hours of practical work per week. No regular student shall register for more than 24 credits and less than 16 credits per semester. In case of MBA (PT) students the minimum and maximum credits per semester will be 12 and 18 respectively.

- 6.5 Credit-based system to be made more versatile, whereby every student may take about 25% of his/her course curriculum outside the parent department (Optional subjects) and the Core subjects which may constitute about 75% in the parent department. In order to improve the soft skills of the students, a course on ‘Communicative English’ will be offered as a non-credit course to all students of the University, whether UG or PG

7. EVALUATION

- 7.1 The evaluation scheme for each semester contains two parts, an internal assessment and an external examination. Equal weightage shall be given for the internal and external examinations. However all practical examinations will be internally evaluated as per the procedures laid down by the concerned Department council. Immediately after the examination is over the HOD shall arrange a valuation camp pertaining to all the examinations conducted in the department and the results shall be finalised within one month after the examination is over.
- 7.2 The existing rules shall apply for the conduct of all external semester end examinations relating to all courses coming under these regulations.
- 7.3 The system of separate minimum for external / internal examinations be dispensed with, to ensure uniformity except for management programmes in SMS.

8. GRADE CARD

- 8.1 The University under its seal shall issue to the students a grade card on completion of each semester. The grade card shall contain the following:
- Title of the courses taken as Core, Elective and Audit (an Audit course shall be listed only if the student has passed it).
 - The credits associated with and grades awarded for each course.
 - The number of credits (Core and Elective separately) earned by the student and the grade point average.
 - The total credits (Core and Elective) earned by the student till that semester.
- 8.2 The following grading system be adopted for all the courses. The following grades will be awarded based on the overall performance in each subject.

Range of marks	Grades	Weightage
90% and above	S – Outstanding	10
[80 – 90)	A – Excellent	9
[70 – 80)	B – Very Good	8
[60 – 70)	C – Good	7
[50 – 60)	D – Satisfactory	6
Below 50%	F – Failed	0

where [X-Y) means X is included and Y is excluded.

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

$$\text{GPA} = \frac{G1C1 + G2C2 + G3C3 + \dots + GnCn}{C1+C2+C3+\dots+Cn}$$

REGULATIONS FOR M.TECH PROGRAMMES IN THE DEPARTMENTS / SCHOOLS OF THE COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

The following regulations are made applicable to all regular M. Tech programs in the university with effect from Academic Year 2003-2004. Only relevant excerpts of the regulations are included here. However, these regulations are not applicable to M Tech programmes in Recognised Institutions.

1. M. Tech Programme

The M. Tech course in the university is a four semester programme with a total duration of two calendar years; where in the first two semesters will include lecturers, laboratory work and seminar. 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 or in an industrial / research / academic institution outside the university.

1.1. Mode of Evaluation

1.1.1. A student would be considered to have progressed satisfactorily at the end of a semester if he / she has a minimum of 75 % attendance.

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

20 marks are awarded for the various assignments given by the teacher.

There shall be two class tests and one end semester exam.

The first class test carries a maximum of 20 marks and is on portions of syllabi covered till then.

The second class test carries a maximum of 20 marks and is on portions covered till then from the first class test.

The end semester examination is for maximum marks of 40 and carries questions from entire syllabi of the course.

1.1.3. There can be a supplementary examination for each subject, conducted within a week of the last examination of the end semester examination. This will be based on the recommendations of the Departmental Council, on receiving specific application from students and based on the merit of the case. Such examination shall carry questions from the entire portions and be awarded only 75 % of the marks scored. It shall be one of the three tests that have fetched the least marks.

1.1.4. The pass minimum in a subject is 50 %. If a candidate fails to secure 50 % he / she is failed in the subject and has to repeat the subject in the next possible chance.

1.1.5. A pass in the course will entitle the student to acquire the credit value allotted for that particular course (For credit values please refer to the course structure)

1.1.6. A student shall acquire a minimum of 36 credits in the first two semesters before he / she register for third semester. A student shall complete his / her M. Tech programme in 8 (Eight) consecutive semesters by acquiring the total credit requirements (72) as specified for the award of the degree.

1.1.7. A sponsored candidate who wishes to go back to take up professional employment after completing II semester course shall obtain permission from the Head of the Department, for the choice of their place of project work at the commencement of the III semester. Such permission may be granted only on merit basis on the recommendation of the Departmental Council and on the production of a certificate from the Head of that

institution to effect that the student is permitted to carry out project work at the establishment / institution where he / she proposed to do the work.

1.1.8. Project evaluation be done at the end of III and IV semesters. At the end of III semester students have to submit a progress report of his / her project work which will be presented before the examination committee of the Department. Marks be awarded based on the evaluation by the committee. At the end of the IV semester the student has to submit the project dissertation. He / she be assessed by the Departmental Examination Committee based on his / her presentation of the project work.

1.2. Classification

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

Range of marks	Grades	<u>Weightage</u>
90% and above	S – Outstanding	10
[80 – 90)	A – Excellent	9
[70 – 80)	B – Very Good	8
[60 – 70)	C – Good	7
[50 – 60)	D – Satisfactory	6
Below 50%	F – Failed	0

Where [X-Y) means that X is included and Y is excluded

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

$$\text{GPA} = \frac{G1C1 + G2C2 + G3C3 + \dots + GnCn}{C1+C2+C3+\dots+Cn}$$

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/Diploma will be given as follows:

<u>Classification</u>	<u>CGPA</u>
First Class with distinction	8 and above
First Class	6.5 and above
Second Class	6 and above

1.6 Declaration of Result

The final marks are reported to the University for Tabulation and declaration of results. The university shall issue mark lists at the end of each semester.

1.7. Review of Question Papers and Valuation of Answer Books.

At the end of each semester, question papers set for class test and end semester examination and scheme of valuation of answer books be reviewed by the Departmental Council. The review report may be placed in the Board of Studies for scrutiny.

1.8. Grievance Cell

The Departmental Council will act as a grievance cell where complaints from the students on the conduct of class test, semester examination and valuation methodology can be examined. The student shall make such complaints within a week of the examination, to the Head of the Department in writing for scrutiny by the grievance cell.

1.9. 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.

These regulations take precedence over existing M.Tech Regulations in so far as inconsistencies are observed.

ACADEMIC CALENDAR 2012-2013 (P.G)

Sl No.	Events	Semesters					
		I 2012 Admn	II 2012 Admn	III 2011 Admn	IV 2011 Admn	V 2010 Admn	VI 2010 Admn
1	Reopening/ Commencement of classes	02.07.12 FN	03.12.12 FN	02.07.12 FN	03.12.12 FN	02.07.12 FN	03.12.12 FN
2	Onam Vacation	24.08.12 FN - 02.09.12 AN	-	24.08.12 FN - 02.09.12 AN	-	24.08.12 FN - 02.09.12 AN	-
3	Reopening	03.09.12 FN	-	03.09.12 FN	-	03.09.12 FN	-
4	Christmas Vacation	-	22.12.12 FN - 31.12.12 AN	-	22.12.12 FN - 31.12.12 AN	-	22.12.12 FN - 31.12.12 AN
5	Reopening	-	01.01.13 FN	-	01.01.13 FN	-	01.01.13 FN
6	End of Semester classes	15.11.12 AN	05.04.13 AN	06.11.12 AN	29.03.13 AN	01.11.12 AN	29.03.13 AN
7	Commencement of Examination	21.11.12	10.04.13	12.11.12	04.04.13	07.11.12	05.04.13
8	Summer Vacation	-	01.05.13 FN - 30.06.13 AN	-	01.05.13 FN - 30.06.13 AN	-	01.05.13 FN - 30.06.13 AN

FACULTY OF ENVIRONMENTAL STUDIES
SCHOOL OF ENVIRONMENTAL STUDIES

M.Sc. (Environmental Technology)
Stream I – Environmental Engineering
SEMESTER I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ENV/ENB 2101	Environmental Biology	C	3	AJ	As for admission to M.Sc. Env.Tech
ENV/ENB 2102	Chemistry of the Environment	C	3	SY	do
ENV/ENB 2103	Physical Processes in the Environment	E	3	MVH	do
ENV/ENB 2104	Environmental Microbiology	C	3	ISB	do
ENV/ENB 2105	Environmental Chemistry Lab	C	2	SY	do
ENV/ENB 2106	Environmental Microbiology Lab	C	2	ISB	do
ENV/ENB 2107	Environmental Physics & Geology Lab	E	1	MVH	do
ENV/ENB 2108	Chemo metrics & Good Laboratory Practices	E	2	VSA	do

SEMESTER II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ENV/ENB 2201	Advanced methods in Environmental Analysis	C	2	SY	As for admission to M. Sc. Env Tech
ENV/ENB 2202	Environmental Engineering	C	3	GF	do
ENV/ENB 2203	Environmental Toxicology	C	3	SR	do
ENV/ENB 2204	Environmental Management and law	E	3	MVH	do
ENV/ENB 2205	Environmental Engineering Lab	C	2	GF	do
ENV/ENB 2206	Chemical Methods in Environmental Analysis Lab	C	2	SY	do
ENV/ENB 2207	Environmental Toxicology & Biochemistry Lab	C	1	SR	do
ENV/ENB 2208	Environmental Modelling	E	2	VSA	do
ENV/ENB 2209	Flow and particle mechanics	C	2	VSA	do

SEMESTER III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ENV 2301	Principles of Chemical Engineering	C	2	GF	As for admission to M.Sc. Env. Tech
ENV 2302	Unit operations and processes in water and waste water treatment	C	3	GF	Do
ENV 2303	Fundamental Engineering designs and drawings	C	3	GF	Do
ENV 2304	Geo informatics and resource management	E	3	MVH	Do

ENV 2305	Solid waste treatment and air quality	C	2	GF	Do	
ENV 2306	Water treatment technology	E	2	VSA	Do	
ENV 2307	Environmental Engineering Designs & Drawings Lab - I	C	2	GF	Do	
ENV 2308	Environmental Engineering and Management Lab - II	C	3	GF	Do	

SEMESTER IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ENV 2401	Project (Major)	C	14		
ENV 2402	EIA - Case Study report & Viva Voce Examination (Internal)	E	2		

Stream 2: Environmental Biotechnology

SEMESTER I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ENV/ENB 2101	Environmental Biology	C	3	AJ	As for admission to M.Sc. Env.Tech
ENV/ENB 2102	Chemistry of the Environment	C	3	SY	do
ENV/ENB 2103	Physical Processes in the Environment	E	3		MVH do
ENV/ENB 2104	Environmental Microbiology	C	3	ISB	do
ENV/ENB 2105	Environmental Chemistry Lab	C	2	SY	do
ENV/ENB 2106	Environmental Microbiology Lab	C	2	ISB	do

SEMESTER II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ENV/ENB 2201	Advanced methods in Environmental admission to	C	2		SY As for
	Analysis				M. Sc. Env Tech
ENV/ENB 2202	Environmental Engineering	C	3	GF	do
ENV/ENB 2203	Environmental Toxicology	C	3	SR	do
ENV/ENB 2204	Environmental Management and law	E	3	MVH	do
ENV/ENB 2205	Environmental Engineering Lab	C	2	GF	do
ENV/ENB 2206	Chemical Methods in Environmental Analysis Lab	C	2	SY	do
ENV/ENB 2207	Environmental Toxicology & Biochemistry Lab	C	1	SR	do
ENV/ENB 2208	Environmental Modelling	E	2	VSA	do
ENV/ENB 2209	Flow and particle mechanics	C	2	VSA	do

SEMESTER III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ENB 2301	Applied Environmental Microbiology	E	3	ISB	As for Admission to M.Sc. Env Tech
ENB 2302	Environmental Biotechnology	C	3	AD	do

ENB 2303 Eco-Toxicology	C	3	SR	do	
ENV 2304 Biodiversity and Conservation		C	3	AJ	do
ENV 2305 Bioremediation	C	3	AD	do	
ENV 2306 Microbial Technology Lab		C	2	AD	do
ENV 2307 Eco-Toxicology Lab		C	1	SR	do
ENV 2308 Ecology and Biodiversity Lab		E	2	AJ	do

SEMESTER IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ENV 2401	Project (Major)	C	14		
ENV 2402	EIA - Case Study report & Viva Voce Examination (Internal)	E	2		

M.TECH. (MARINE BIOTECHNOLOGY)

SEMESTER I

Course Code	Paper	C/E	Credits	Pre requisites
CAH 3101	Introduction to Marine Sciences	C	3	Minimum 60% Marks or equivalent CGPA in any one of the following from any recognised Indian or foreign University. 1) B.Tech/BE in Chemical Engineering, Biochemical Engineering, Industrial Biotechnology, Leather Biotechnology, Chemistry/Biotechnology, Biomedical Engineering, B.Pharma, Chemical Technology; 2) M Sc in Biotechnology, Marine Biotechnology, Life Sciences, Botany/Zoology/Biochemistry, Microbiology/Genetics, Biophysics, Microbial Genetics and Bioinformatics, Marine Biology/Aquatic Biology & Fisheries/Environmental Biotechnology/Mariculture
CAH 3102	Dynamics & Techniques in Marine Productivity & Biodiversity	C	3	Do
CAH 3103	Introduction to Aquaculture & Marine Biotechnology	C	3	Do
CAH 3104	Marine Genomics, Proteomics & Bioinformatics	C	3	Do
CAH 3105	Marine Bio prospecting	C	3	Do
CAH 3106	Bioprocess technology	E	1	Do
CAH 3107	Advanced molecular Biology - Practical	C	2	Do
CAH 3108	Bioprocess Technology Practical	C	2	Do

SEMESTER II

Course Code	Paper	C/E	Credits	Pre requisites
CAH 3201	Finfish and Shellfish Immunology	C	3	Do
CAH 3202	High health brood stock development	C	3	Do
CAH 3203	Disease diagnosis and management	C	3	Do
CAH 3204	Aquaculture environment management	C	3	Do
CAH 3205	Aquaculture Medicine	C	3	Do
CAH 3206	Organic Aquaculture	E	1	Do
CAH 3207	Anatomy and physiology of cultivable Finfish and Shellfishes	E	1	Do
CAH 3208	Finfish and Shellfish Immunology	C	2	Do
CAH 3209	Disease diagnosis and Management	C	2	Do

SEMESTER III & IV

Course Code	Paper	C/E	Credits	Pre requisites
CAH 3301	Full time project in an R & D lab of a biotech industry	C	30	Do
	Submission of a write up on marine biotechnology industry and an hour presentation	C	10	

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1.	Dr. Mrs. Suguna Yesodharan (SY) Reader & Director	Environmental Chemistry & Photo Catalysis	0484-2604889(R) 0484-2577311 (O) suguna@cusat.ac.in , ugunayasodharan@gmail.com
2.	Dr. Mrs. Ammini Jospheh (AJ) Professor	Algology, Environmentat Biology	0484-2577311 (O) amij@cusat.ac.in
3.	Dr. I. S. Bright Singh (ISB) Professor and Dean	Environmental Microbiology	0484-2381120 bsingh@md3.vsnl.net.in www.ncaah.org
4.	Dr. Mrs. Rajathy Sivalingam (SR) Reader	Physiology & Toxicology	0484-2577311, 2577246 (R) rajkumar@cusat.ac.in
5.	Dr. M. V. Harindranathan Nair (MVH) Sr. Lecturer	Environmental Physics, Environmental Management & Remote Sensing	0478-2563616
6.	Mr. M Anand (AD) Senior Lecturer	Environmental Biotechnology	9447254921 anandm@cusat.ac.in
7.	Dr. V Sivanandan Achari (VSA) Lecturer	Environmental Chemistry, Environmental Modelling	9847952318 vsachari@cusat.ac.i

FACULTY OF ENGINEERING

School of Engineering, CUSAT

M Tech (Full Time) Degree course in CIVIL ENGINEERING

(Specialization: Geotechnical Engineering)

SEMESTER I				
Course Code	Name of the Subject	Hours per week	No. of Credits	Faculty
CEG 3101	Applied Mathematics	4	4	Dr Sasi Gipalan
CEG 3102	Advanced Soil Mechanics	4	4	Prof. Benny Mathews Abraham
CEG 3103	Soil Behaviour	4	4	Prof. Sobha Cyrus
CEG 3104	Soil Dynamics and Machine Foundations	4	4	Prof. Beena K. S.
CEG 3105	Elective I	4	4	Smt. Bindu C. S
CEG 3106	Elective II	4	4	Dr. Abdu Rahiman
CEG 3107	Geotechnical Engineering Laboratory I	3	1	Prof. Beena K. S
CEG 3108	Seminar I	3	1	Prof. Beena K. S
	Total	30	26	

ELECTIVE I

- CEG 3105 A Theoretical Soil Mechanics
- CEG 3105 B Remote Sensing and GIS
- CEG 3105 C Pavement Design and Evaluation

ELECTIVE II

- CEG 3106 A Finite Element Methods in Geomechanics
- CEG 3106 B Ground Water Engineering
- CEG 3106 C Land Slide Engineering

SEMESTER II			
Course Code	Name of the Subject	Hours per week	No. of Credits
CEG 3201	Subsurface investigation and Instrumentation	4	4
CEG 3202	Advanced Foundation Engineering	4	4
CEG 3203	Ground Improvement Techniques	4	4
CEG 3204	Earth Retaining Structures	4	4
CEG 3205	Elective III	4	4
CEG 3206	Elective IV	4	4
CEG 3207	Computer Applications Laboratory	3	1
CEG 3208	Seminar II	3	1
	Total	30	26

ELECTIVE III

- CEG 3205 A Earthquake Geotechnical Engineering
 - CEG 3205 B Geosynthetics in Geotechnical Engineering
 - CEG 3205 C Rock Mechanics
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ELECTIVE IV

CEG 3206 A	Structural Design of Foundations
CEG 3206 B	Geo-environmental Engineering
CEG 3206 C	Soil Structure Interaction

SEMESTER III		
Course Code	Name of the Subject	No. of Credits
CEG 3301	Industrial /Field Training	2
CEG 3302	Project Progress Evaluation	8
	Total	10

SEMESTER IV		
Course Code	Name of the Subject	No. of Credits
CEG 3401	Project Dissertation Evaluation & Viva Voce	14
	Total	14

Grand Total

76

M. Tech Degree (Full Time) course in MECHANICAL ENGINEERING (Specialisation: Thermal Engineering)

SEMESTER I			
Course Code	Name of the Subject	Hours/Week	No. of Credits
MET 3101	Advanced Heat and Mass Transfer - JVE	4	4
MET 3102	Advanced Fluid Mechanics - PJJ	4	4
MET 3103	Refrigeration and Air-conditioning - JES	4	4
MET 3104	Incompressible and Compressible Flows- PST	4	4
MET 3105	Elective I - GKT	4	4
MET 3106	Elective II - NHJ	4	4
MET 3107	Thermal Engineering Laboratory I	3	1
MET 3108	Seminar I	3	1
	Total	30	26

ELECTIVE I

MET 3105 A	Introduction to Turbulence
MET 3105 B	IC Engine Combustion and Pollution - GKT
MET 3105 C	Gas Turbines
MET 3105 D	Diagnostic Methods in Combustion Systems

ELECTIVE II

MET 3106 A	Computational Methods in Engineering - NHJ
MET 3106 B	Combustion Technology
MET 3106 C	Conduction and Radiation
MET 3106 D	Principles of Turbo Machinery

JVE – Dr. James Varghese

GKT – Mr. Gireesh Kumaran Thampi BS

PJJ – Mr. PJ Joshy

NHJ – Dr. NH Jayadas

JES – Mr. Jacob Elias

PST – Dr. PS Tide

FACULTY OF HUMANITIES
DEPARTMENT OF HINDI

MA (Hindi)
Semester I

Course Code	Paper	C/ECredits	Faculty	Pre requisites
HIN 2101	Ancient and post medieval poetry	C 4	NM / MS	Graduate Level Hindi
HIN 2102	Fiction	C 4	KV / GF	Graduate Level Hindi
HIN 2103	Functional Hindi	C 4	RS / KV	Graduate Level Hindi
HIN 2104	History of Hindi Literature (Ancient and Medieval Period)	C 3	MS / RS / KA / GF	Graduate Level Hindi
HIN 24	Elective	E 3	MS / RS / KV / NM / GF	Graduate Level Hindi

Semester II

Course Code	Paper	C/ECredits	Faculty	Pre requisites
HIN 2201	Bhakti Poetry	C 4	RS / NGD / NM	Graduate Level Hindi
HIN 2202	Essay Sketches and other Prose forms	C 4	GF / NGD / KV	Graduate Level Hindi
HIN 2203	Development and Structure of Hindi	C 4	KV / NGD / KA	Graduate Level Hindi
HIN 2204	Modern Poetry - I	C 3	NGD / RS / KV / MS	Graduate Level Hindi
HIN 23	Elective	E 3	MS / NM / GF NGD / RS / KV	Graduate Level Hindi

Semester III

Course Code	Paper	C/ECredits	Faculty	Pre requisites
HIN 2301	Modern Poetry II	C 4	NGD / RS / MS / NM	Graduate Level Hindi
HIN 2302	Drama and Theatre	C 4	MS / RS / GF	Graduate Level Hindi
HIN 2303	History of Literature – Modern Period	C 4	KA / RS / KV	Graduate Level Hindi
HIN 2304	Indian Poetics	C 3	NGD / RS	Graduate Level Hindi
HIN 23__	Elective	E 3	MS / NM / GF PGD / RS / KV	Graduate Level Hindi

Semester IV

Course Code	Paper	C/ECredits	Faculty	Pre requisites
HIN 2401	Modern Poetry – III	C 4	MS / NM	Graduate Level Hindi
HIN 2402	Indian Literature	C 4	PAS / RS / KV	Graduate Level Hindi
HIN 2403	Western Poetics	C 4	RS / KV / NM	Graduate Level Hindi

HIN 2404	General Linguistics	C	3	KA / NGD	Graduate Level Hindi
HIN 24__	Elective	E	3	PAS / MS / NM / RS / KV / NGD	Graduate Level Hindi

List of Electives Offered

1	Comparative Literature	22	Special Author: Tulasidas
2	Spoken Hindi	23	Special Author: Kabir
3	Creative Writing	24	Special Author: Surdas
4	Malayalam Literature	25	Special Author: Bharatendu Harichandra
5	Feminist Literature	26	Special Author : Premchand
6	Marxian Aesthetics and Progressive literature	27	Special Author : Jayashankar Prasad
7	Theatre Studies with special reference to Indian Theatre	28	Special Author : Hazari Prasad Dwivedi
8	Folk Literature	29	Special Author : Suryakant Tripathi Nirala
9	Dalit Literature	30	Special Author : Mahadevi Varma
10	Hindi Literature	31	Special Author: Ajney
11	Aesthetic Study of Literature	32	Special Author : Mukthibodh
12	Translation Studies	33	Special Author : Yashpal
13	One Act Plays	34	Special Author : Nagarjun
14	Modern Short Story	35	Special Author : Phaneeswarnath Renu
15	Contemporary Short Story	36	Special Author : Mohan Rakesh
16	Dimensions of Poetry teaching	37	Special Author : Nirmal Varma
17	Official Language Management	38	Special Author : Sarveswardayal Saxena
18	Poetic Diction	39	Special Author : Bhishma Sahini
19	Narratology	40	Special Author : Harishankar Parsayi
20	Progressive Literature	41	Special Author : Dhoomil
21	Indian Culture	42	Kavyang – Chand aur Alankar

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1.	Dr. N. Mohanan (NM) Professor	Modern Literature	0484-2609302 nmohan@cusat.ac.in2.
2.	Dr. R. Sasidharan (RS) Professor & Head	Modern Hindi Drama, Theatre and Criticism	0484-2540352 rsd@cusat.ac.in
3.	Dr. N.G. Devaki (NGD) Professor	Comparative Literature-Ancient & Modern Poetry, Computer aided Language learning and Functional Hindi	0484-2576263
4.	Dr. K. Vanaja (KV) Reader	Criticism Comparative Literature	0484-2332783 vanaja@cusat.ac.in
5.	Dr. K. Ajitha (KA) Reader	Modern Drama and Theatre Comparative Study	0484 - 2575845 ajiravi@cusat.ac.in

DEPARTMENT OF CULTURE AND HERITAGE

M.A. (TRANSLATION) – GERMAN

Semester I

Course Code	Title of Paper	C/E	Credit	Faculty	Prerequisite
DCH 2101	Modern German – Course – I	C	4	AAM	
DCH 2102	Communicative English – Course I	C	4	BBS	Graduate Level
DCH 2103	Translation – Course I	C	4	MVP/AAM	German
DCH 2104	Linguistics – Course I	C	4	MVP	
DCH 2105	Elective	E	3		

Semester II

Course Code	Title of Paper	C/E	Credit	Faculty	Prerequisite
DCH 2201	Modern German – Course II	C	4	AAM	
DCH 2202	Communicative English – Course II	C	4	MVP/BBS	Graduate Level
DCH 2203	Translation of Journalistic Texts & Simple Texts	C	4	AAM	German
DCH 2204	Linguistics – Course II	C	4	MVP	
DCH 2205	Elective	E	3		

Semester III

Course Code	Title of Paper	C/E	Credit	Faculty	Prerequisite
DCH 2301	Advanced German – Course III	C	4	AAM	
DCH 2302	Communicative English - Course III				
	Business Correspondence Essay Writing	C	4	MVP/BBS	Graduate Level
DCH 2303	Translation (Adopted Scientific Texts) – Course III	C	4	AAM	German
DCH 2304	Theory of Translation I	C	4	MVP	
DCH 2305	Elective	E	3		

Semester IV

Course Code	Title of Paper	C/E	Credit	Faculty	Prerequisite
DCH 2401	Advanced German – Course IV	C	4	AAM	
DCH 2402	Technical Translation – Course IV	C	4	AAM	Graduate Level
DCH 2403	Natural Language Processing & Machine Translation	C	4	MVP	German
DCH 2404	Theory of Translation II	C	4	MVP	
DCH 2405	Project	C	3		

Details of Faculty

Name & Designation	Specialisation	Communication
Sri.A. Achutha Menon (AAM) Senior Lecturer in German	German Language, Literature, Translation	achutan_ambady@cusat.ac.in
Smt. Brinda Bala Sreenivasan (BBS) Lecturer in English	English Language, Literature, Translation	brindasaju@cusat.ac.in

Electives

1. Culture and Heritage of Kerala
2. Basic Malayalam
3. Basic Sanskrit
4. Linguistics
5. Film Studies
6. Communicative English
7. Communicative German
8. Communicative Russian
9. Comparative Literature and Culture

**FACULTY OF LAW
SCHOOL OF LEGAL STUDIES**

**LL.M
Semester I**

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
SLS 2101	Law in Society (Compulsory Course)	C	4	GF	LL.B
SLS 2102	Centre-State Relations (Constitution Law)	C	4	GF	LL.B
SLS 2103	General Principles of Criminal Law (Criminal Law)	C	4	GF	LL.B
SLS 2104	International Human Rights Law (Human Rights and Duties Education)	C	4	NSS	LL.B
SLS 2105	Foundations of Contractual Liability (Corporate Governance and Securities Law)	C	4	GF	LL.B
SLS 2106	Law of Corporate Governance (Corporate Governance and Securities Law)	C	4	GF	LL.B
SLS 2107	Natural Rights and Duties: Origin and Development (Human Rights and Duties Education)	E	4	NSS	LL.B
SLS 2108	Environment and Human Rights (Human Rights and Duties Education)	E	4	PSS	LL.B
SLS 2109	Patent Law, TRIPS Agreement and Access to Medicine (Intellectual Property Laws)	E	4	NSG	LL.B
SLS 2110	Law in Shareholder Protection (Corporate Governance and Securities Law)	E	4	GF	LL.B
SLS 2111	Seminar (Compulsory Course)	C	1	GF	LL.B
SLS 2112	Clinical Legal Education (Compulsory Course)	C	1	GF	LL.B

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
SLS 2201	Judicial Process (Compulsory Course)	C	4	GF	LL.B
SLS 2202	Centre-State Relations (Constitution Law)	C	4	GF	LL.B
SLS 2203	Criminology and Penology I (Criminal Law)	C	4	GF	LL.B
SLS 2204	Human Rights and the Indian Legal System (Human Rights and Duties Education)	C	4	NSS	LL.B
SLS 2205	Securities Law (Corporate Governance and Securities Law)	C	4	GF	LL.B
SLS 2206	Law of Corporate Finance (Corporate Governance and Securities Law)	C	4	GF	LL.B
SLS 2207	Elective I*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2208	Elective II*	E	4	VSS/NSS/N	LL.B

				SG/PSS/GF	
SLS 2209	Elective in III*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2210	Elective in IV*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2211	Seminar (Compulsory Course)	C	1	GF	LL.B
SLS 2212	Clinical Legal Education (Compulsory Course)	C	1	GF	LL.B

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
SLS 2301	Legal Education and Research Methodology (Compulsory Course)	C	4	GF	LL.B
SLS 2302	Parliamentary Government (Constitution Law)	C	4	GF	LL.B
SLS 2303	Penology II (Criminal Law)	C	4	GF	LL.B
SLS 2304	Science Technology and Human Rights (Human Rights and Duties Education)	C	4	NSS	LL.B
SLS 2305	Law of Securities Intermediaries (Corporate Governance and Securities Law)	C	4	GF	LL.B
SLS 2306	Corporate Re-organization (Corporate Governance and Securities Law)	C	4	GF	LL.B
SLS 2307	Elective I*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2308	Elective II*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2309	Elective in III*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2310	Elective in IV*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2311	Seminar (Compulsory Course)	C	1	GF	LL.B
SLS 2312	Clinical Legal Education (Compulsory Course)	C	1	GF	LL.B

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
SLS 2401	Public Corporations (Administrative Law)	C	4	GF	LL.B
SLS 2402	Emergency and Defence Power (Constitution Law)	C	4	GF	LL.B
SLS 2403	Comparative Criminal Procedure (England, India, France and China) (Criminal Law)	C	4	GF	LL.B
SLS 2404	International Refugee and Humanitarian Law (Human Rights and Duties Education)	C	4	NSS	LL.B

SLS 2405	Elective I*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2406	Elective II*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2407	Elective in III*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2408	Elective in IV*	E	4	VSS/NSS/N SG/PSS/GF	LL.B
SLS 2409	Elective Course in Dissertation	E	14	AMV	LL.B
SLS 2410	Seminar (Compulsory Course)	C	1	PSS	LL.B
SLS 2411	Clinical Legal Education (Compulsory Course)	C	1	VSS/ NSS/PSS /GF	LL.B

* The Elective topics will be decided according to the availability of teachers at the beginning of each semester.

Details of Faculty

Sl. No.	Name & Designation	Specialisation	Communication
1.	Dr. V.S. Sebastian (VSS) (Associate Professor & Director)	Commercial Law	Sebastian@cusat.ac.in Ph: 0484-2576187
2.	Dr. N.S. Gopalakrishnan (NSG) (Professor)	Commercial Law, Criminal Law & IPL	nsg@cusat.ac.in Ph: 0484-2577542
3.	Dr, N.S. Soman (NSS) (Associate Professor)	Criminal Law, Constitutional Law & Human Rights Law	nssoman@yahoo.co.in 0484-2440084
4.	Smt. P.S. Seema (PSS) (Assistant Professor)	Criminal Law, Constitutional Law & Human Rights Law	pss.sls@yahoo.nic.in Ph: 0484-2233411
5.	Smt. Vani Kesari A. (VK) (Assistant Professor)	Administrative Law & Constitutional Law	vanikesaria@gmail.com Ph: 0484-2543744

LL.M ELECTIVE COURSES

Group A: Administrative Law:

Elective Course I	Local Government Administration	(4 credits)
Elective Course II	Fundamental rights	(4 credits)
Elective Course III	Law Against Corruption and Maladministration	(4 credits)
Elective Course IV	Right to Information and Governmental Accountability	(4 credits)
Elective Course IV	Law on Public Services	(4 credits)

Group B: Constitutional Law

Elective course I	Protection of Life and Personal Liberty	(4 credits)
Elective Course II	Panchayati Raj System	(4 credits)
Elective Course III	Environmental Protection under India Constitution	(4 credits)
Elective Course IV	Right to Property under Indian Constitution	(4 credits)
Elective course V	Constitutional History of India	(4 credits)

Group C: Commercial Law

Elective course I	Remedies under Contract Law	(4 credits)
Elective course II	Law of Corporate Finance	(4 credits)
Elective course III	Law of Agency	(4 credits)
Elective course IV	Sale and supply of goods	(4 credits)
Elective course V	General Principles of International Trade Law	(4 credits)
Elective Course VI	Law of Carriages	(4 credits)
Elective Course VII	Competition Law	(4 credits)
Elective Course VIII	Law on Capital Markets	(4 credits)
Elective Course IX	Law of Securities Intermediaries	(4 credits)
Elective Course X	Law on Corporate Reorganisations	(4 credits)
Elective Course XI	Law on Corporate Securities	(4 credits)
Elective Course XII	Law on Mutual Funds and Collective Investment Schemes	(4 credits)
Elective Course XIII	Law on Corporate Formations	(4 credits)
Elective Course XIV	Investor Protection Laws	(4 credits)
Elective Course XV	Disclosure Regulations under Company Law	(4 credits)
Elective Course XVI	Corporate Bankruptcy and Insolvency	(4 credits)
Elective Course XVII	Law on Shareholder Protection	(4 credits)

Group D: Criminal Law:

Elective course I	Juvenile Justice	(4 credits)
Elective course II	Socio-economic Offences and the Criminal Justice Process	(4 credits)

Elective course III	Criminal Investigation and Forensic Science	(4 credits)
Elective course IV	Criminal Justice Administration and Protection of Human Rights	(4 credits)
Elective course V	Socio-economic and Scientific Development And Criminal Justice Administration	(4 credits)
Elective course VI	Seminar course on Criminal Justice Administration in India : New Trends	(4 credits)
Elective course VII	Legal Control of Cyber Communications	(4 credits)
<u>Group E: Labour Law</u>		
Elective course I	International Labour Organization	(4 credits)
Elective course II	Social Security Law	(4 credits)
Elective course III	Personality and Legal Performance	(4 credits)
<u>Group F: Maritime Law</u>		
Elective course I	Maritime Employment	(4 credits)
Elective course II	Ownership and Management of Ships	(4 credits)
Elective course III	Maritime Safety and Law of Collision	(4 credits)
Elective course IV	Law of Ports & Harbours	(4 credits)
<u>Group G: Environmental Law</u>		
Elective course I	Legal Control of Industrial Pollution	(4 credits)
Elective course II	Environment and Development	(4 credits)
Elective course III	Coastal Zone Management	(4 credits)
<u>Group – H: Consumer Law</u>		
Elective course I	Consumer and Public Utilities services	(4 credits)
Elective course II	Comparative Consumer Law	(4 credits)
Elective course III	Sale and supply of goods	(4 credits)
Elective course IV	Competition Law	(4 credits)
<u>Group I: Human Rights and Duties Education</u>		
Elective course I	Natural Rights and Duties: Origin and Development	(4 credits)
Elective course II	Human Rights and Weaker Sections	(4 credits)
Elective course III	Experiments involving Human – Human Rights Issues	(4 credits)
Elective course IV	International Crimes and Criminal Tribunals	(4 credits)
Elective course V	Affirmative Action by the State and Its Impact on Human Rights	(4 credits)

Elective course VI	Genetic Engineering and Human Rights	(4 credits)
Elective course VII	Environment and Human Rights	(4 credits)
Elective course VIII	Law Enforcement Agencies and Human Rights	(4 credits)

Group J: Intellectual Property Laws

Elective course I	Protection of computer programme	(3 credits)
Elective course II	Protection of Biotechnological Inventions	(3 credits)
Elective course III	Intellectual Property Protection of Performer's	(2 credits)
Elective course IV	Protection of Broadcast Organizations	(2 credits)
Elective course V	Protection of Traditional Knowledge	(3 credits)
Elective course VI	Drafting Patent Claims	(3 credits)
Elective course VII	Intellectual Property Protection in Internet	(3 credits)
Elective course VIII	Protection of Well-known Marks	(2 credits)
Elective course IX	Protection of Plant Varieties	(3 credits)
Elective course X	Protection of Geographical Indication	(2 credits)
Elective course XI	Transfer of Technology	(2 credits)
Elective course XII	Protection of Undisclosed Information	(2 credits)
Elective course XIII	Legal Protection of Databases	(2 credits)
Elective course XIV	Protection of Semi-conductors	(2 credits)
Elective course XV	Procedure for Trademark Registration	(2 credits)
Elective course XVI	Biotechnology and IPR	(4 credits)
Elective course XVII	Patent law and Trips Agreement	(4 credits)
Elective course XVIII	IPR and Computer Programme	(4 credits)

Group K: International Trade Law

Elective Paper I	Ancilliary Shipping Contracts	(4 credits)
Elective Paper II	International Carriage of Goods	(4 credits)

Group L: Corporate Governance And Securities Law

Elective Paper I	Mutual Funds and Collective Investment Schem	(4 credits)
Elective Paper II	Investor Protection Laws	(4 credits)
Elective Paper III	Corporate Bankruptcy & Insolvency	(4 credits)
Elective Paper IV	Law on Share holder Protection	(4 credits)
Elective Paper V	Law on Corporate Formations	(4 credits)

FACULTY OF MARINE SCIENCES
SCHOOL OF INDUSTRIAL FISHERIES

M.Sc (Industrial Fisheries)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SIF 2101	Taxonomy And Bionomics of Commercial And Cultivable Fin And Shell Fishes	E	3	GF	Graduate in Life Science/ Fishery science
SIF 2102	Fish And Environment	E	3	BMK	Graduate in Life Science/ Fishery science
SIF 2103	Fishing Craft And Gear Materials	C	3	HK	Graduate in Life Science/ Fishery science
SIF 2104	Fishing Gear And Their Fabrication	E	3	HK	Graduate in Life Science/ Fishery science
SIF 2105	Fish Process Biochemistry	E	3	SM, JM	Graduate in Fishery Science/Life Science/ Chemical Science
SIF 2106	Fundamentals of Fish Preservation	E	3	JM, SM	Graduate in Fishery Science/Life Science/ Chemical Science
SIF 2107	Managerial Economics	C	3	KT, RK	Graduate in Science/ Social Science
SIF 2108	Ecological Economics	E	3	KT, RK	Graduate in Science/ Social Science
SIF 2109	Management Accounting And Finance Management for Fisheries	C	3	AR,MS	Graduate in Science/ Social Science
SIF 2110	Computer Applications (Practical)	E	2	GF	
SIF 2111	Statistics (Practical)	E	2	GF	
SIF 2112	Taxonomy and Bionomics of Commercial and Cultivable Fin and Shellfishes (Practical)	E	1	BMK	
SIF 2113	Fish and Environment (Practical)	E	1	BMK	
SIF 2114	Fish Process Biochemistry (Practical)	E	1	SM, JM	
SIF 2115	Fundamentals of Fish Preservation (Practical)		1	JM, SM	

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SIF 2201	Capture Fisheries and Fish Population Dynamics	C	3	GF	SIF 2101
SIF 2202	Oceanic and Deep Sea Fisheries	E	3	GF	SIF2101/ Seminar
SIF 2203	Fishing Craft Technology	C	3	HK, Guest	SIF 2103 / SIF 2104
SIF 2204	Freezing and Canning Technology of Fish	C	3	JM, SM	SIF 2105 / SIF2106

SIF 2205	Instrumental Techniques in Fish Product Analysis	C	3	SM, JM	
SIF 2206	Economics of Fisheries Production	C	3	KT, RK	SIF 2107/ SIF 2108
SIF 2207	Aquaculture Economics	E	3	RK, KT	SIF 2107/ SIF 2108
SIF 2208	Organization Management	E	3	AR,MS	Graduate in Science/ Social science
SIF 2209	Capture Fisheries And Fish Population Dynamics (Practical)	C	1	BMK	
SIF 2210	Fishing Craft Technology (Practical)	C	1	HK	
SIF 2211	Freezing & Canning Technology Fish (Practical)	C	1		JM, SM
SIF 2212	Economics of Fisheries Production (Field study)	C	1		RK, KT

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SIF 2301	Breeding And Seed Production Technology of Fin & Shell Fish	C	3	BMK	SIF 2201
SIF 2302	Fish Genetics And Hybridization	E	3	BMK	SIF 2201
SIF 2303	Fishing Gear Technology	C	3	HK	SIF 2203
SIF 2304	Inland Fishing Gear, Their Design And Operation	E	3	HK	SIF 2203/ consent of the teacher
SIF 2305	Fishery Products Technology	C	3	SM, JM	SIF 2204
SIF 2306	Value – Added Fishery Products	E	3	JM, SM	Consent of the teacher
SIF 2307	Economics of Fish Marketing	E	3	RK, KT	Graduate Science / Social Science/Consent of the teacher
SIF 2308	Fisheries and Rural Development	E	3	RK, KT	Graduate Science / Social Science/ Consent of the teacher
SIF 2309	Operation Management For Fisheries Industry	C	3	AR,MS	SIF 2109/SIF 2208/ Consent of the teacher
SIF 2310	Decision Tools and Management Techniques	E	3	GF	Graduate in Science/ Social Science
SIF 2311	Breeding and Seed Production Technology of Fin and Shell Fish (Practical)	C	1	BMK	
SIF 2312	Fishing Gear Technology (Practical)	C	1	HK	
SIF 2313	Fishery Products Technology (Practical)		1	SM, JM	

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SIF 2401	Management of Fish and Shrimp Grow Out Systems	C	3	BMK	SIF 2301
SIF 2402	Ecology of Culture Systems and Environmental Impacts of Aquaculture	E	2	BMK	Graduate in Life Science/ Fishery Science
SIF 2403	Fishing Operation, Seamanship and Navigation	E	3	HK & GF	
SIF 2404	Quality Assurance and Food Safety in Seafood Industry	C	3	JM, SM	SIF 2305
SIF 2405	Seafood Quality Systems - Emerging Trends	E	3	SM, JM	Consent of the teacher

SIF 2406	Economics of Fisheries Management	C	3	RK, KT	SIF 2206/SIF 2307/ Consent of the teacher
SIF 2407	Fisheries and Tourism Development	E	3	KT, RK	Consent of the teacher
SIF 2408	Marketing Management for Fishery Products	C	3	AR, MSSIF 2309/ Consent of the teacher	
SIF 2409	Total Quality Management	E	3	GF	Consent of the teacher
SIF 2410	Management of Fish And Shrimp Grow Out Systems (Practical)	C	1	BMK	
SIF 2411	Ecology of Culture Systems and Environmental Impacts of Aquaculture (Practical)			C	1 BMK
SIF 2412	Quality Assurance and Food Safety in Seafood Industry (Practical)	C	1	SM, JM	
SIF 2413	Marketing Management for Fishery Products (Field Study) Dissertation & Viva-voce	E		5	MS
SIF 2414	Implant Training	C	1	SM, JM	
SIF 2415	Dissertation	C	3	All Faculty	
SIF 2416	Viva-voce	C	1		

Details of Faculty

Sl.No.	Name & Designation	Specialization	Communication
1.	Dr. B. Madhusoodana Kurup (BMK) (Professor on Leave)	Aquaculture & Fisheries Biology	madhukurup@hotmail.com Ph: 0484 2800424
2.	Dr. Saleena Mathew (SM) (Professor)	Biochemistry and Fish Processing Technology	smathew@cusat.ac.in reubro@md2.vsnl.net.in Ph: 0484 2323110
3.	.Dr.A. Ramachandran (AR) (Professor& Director)	Fisheries Management	rahulrama@hotmail.com Ph: 0484-2356133 9447062400
4.	Dr. K. T. Thomson (KT) (Reader)	Fisheries Management & Environmental Economics	thomsonkt@rediffmail.com Ph: 0484 2333142
5.	Dr. M. Harikrishnan (HK) (Reader)	Industrial Fisheries & Fishery Biology	mahadevhari@hotmail.com Ph: 9447327804
6.	Sri. John Mohan, (JM) (Sr. Lecturer)	Fish Processing Technology	john mohan@cusat.ac.in Ph: 0484 2805142
7.	Dr. Mini Sekharan N. (MS) (Lecturer)	Fisheries Management Ornamental Fish Marketing	minisekharan@yahoo.com Ph: 9895752269

DEPARTMENT OF ATMOSPHERIC SCIENCES

M.Sc. Meteorology

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
ATM 2101	Geophysical Fluid Dynamics	E	4	BC	Graduate Level Maths/ Phy
ATM 2102	Atmospheric Physics	C	4	Guest	-do-
ATM 2103	Introduction to the Ocean	E	4		-do-
ATM 2104	Advanced Mathematics	E	3	Guest	-do-
ATM 2105	Numerical Methods	E	3	Guest	-do-
ATM 2108	Meteorological Instruments	C	2	KRS	-do-
ATM 2106	Observational Techniques (<i>Practical</i>)	C	2	KRS	-do-
ATM 2107	Computer Programming I (<i>Practical</i>)	C	2	IK	COT

Semester II

Course Code	Course Title	C/E	Credits	Faculty	Pre-requisites
ATM 2201	Synoptic Meteorology	C	4	VGN	ATM 2102
ATM 2202	World Climatology	C	4	Guest	COT
ATM 2203	Dynamic Meteorology I	C	4	Guest	ATM 2101
ATM 2204	Cloud Physics & Atmospheric Electricity	E	3		ATM 2102
ATM 2205	Remote Sensing	C	4	KRS	COT
ATM 2206	Meteorological Computations I (<i>Practical</i>)	C	2	BC	ATM 2101
ATM 2207	Computer Programming II (<i>Practical</i>)	C	2	IK	ATM 2107

Semester III

Course Code	Course Title	C/E	Credits	Faculty	Pre-requisites
ATM 2301	Tropical Meteorology	C	4	VGN	ATM 2201
ATM 2302	Dynamic Meteorology II	C	4	CAB	ATM 2203
ATM 2303	Satellite Meteorology	E	2	KRS	ATM 2205
ATM 2304	Air - Sea Interaction	E	3		ATM 2102, ATM 2103
ATM 2305	Middle Atmosphere	E	3	VM	-do-
ATM 2306	Meteorological Analysis (<i>Practical</i>)	C	2	VGN	ATM 2201
ATM 2307	Meteorological Computations II (<i>Practical</i>)	C	2	IK	ATM 2203

Semester IV

Course Code	Course Title	C/E	Credit	Faculty	Pre-requisites
ATM 2401	Numerical Weather Prediction	C	4	BC	ATM 2302
ATM 2402	Agricultural Meteorology	E	3	Guest	COT
ATM 2403	Hydrometeorology	E	3	Guest	COT
ATM 2404	Atmospheric Chemistry	E	3		COT
ATM 2405	Atmospheric Boundary Layer	E	3	CAB	ATM 2103, ATM 2203
ATM 2406	Air Pollution Meteorology	E	3	KRS	COT
ATM 2407	Dissertation Evaluation and Viva- Voce	C	6	All	

M.Tech (Atmospheric Sciences)

Semester I

Course Code	Course Title	C/E	Credits	Faculty	Pre-requisites
ATM 3101	Large Scale Atmospheric Circulations	C	4	VM	M.Sc. in Maths/ Phy /Oceanography/ Meteorology
ATM 3102	Atmospheric Physics	E	4	Guest	Graduate Level Maths/Phy
ATM 3103	Tropical Meteorology	E	4	VGN	do
ATM 3104	Atmospheric Dynamics I	E	4	BC	do
ATM 3105	Remote Sensing Applications	E	4	KRS	ATM 2205
ATM 3106	Applied Statistics	E	4	Guest	
ATM 3107	Advanced Mathematics	E	4	Guest	COT
ATM 3108	Lab Course I (<i>Practical</i>)	C	2	IK	
ATM 3109	Meteorological Analysis (<i>Practical</i>)	E	2	VGN	
ATM 3110	Satellite Meteorology	E	2	KRS	ATM 2205
ATM 3111	Middle Atmosphere	E	3	VM	

Semester II

Course Code	Course Title	C/E	Credit	Faculty	Pre-requisites
ATM 3201	Atmospheric Modelling	C	4	BC	ATM 3104
ATM 3202	Climate Dynamics	C	4	Guest	-do-
ATM 3203	Mesoscale Meteorology	C	4	VM	-do-
ATM 3204	Atmospheric Dynamics II	E	4	CAB	-do-
ATM 3206	Air Pollution Meteorology	E	3	KRS	COT
ATM 3207	Agricultural Meteorology	E	3	Guest	COT
ATM 3208	Hydrometeorology	E	3	Guest	
ATM 3209	Lab Course II (<i>Practical</i>)	C	2	IK	
ATM 3210	Boundary Layer Meteorology	E	3	CAB	

Semester III

Course Code	Course Title	C/E	Credit	Faculty	Pre-requisites
ATM 3301	Project Progress and Midterm Evaluation	C	16		

Semester IV

Course Code	Course Title	C/E	Credit	Faculty	Pre-requisites
ATM 3401	Project Dissertation Evaluation and Viva-Voce	C	20		

Details of Faculty

Sl.No.	Name & Designation	Specialization	Communication
1.	Dr..K.R.Santosh (KRS) Assoc. Professor	Remote Sensing	santosh@cusat.ac.in 0484-2336786/2863815
2.	Dr. K. Mohan Kumar (KMK) Professor & Dean, Faculty of Environmental Studies	Stratosphere-Troposphere Interactions, Middle Atmosphere	kmk@custa.ac.in 0484-2340995/2863817
3.	Dr.C.A.Babu (CAB) Professor & Head	Boundary Layer Meteorology	babuca@cusat.ac.in 0480-2881651/ 0484-2863813/286802
4.	Baby Chakrapani (BC) Assoc. Professor	Numerical Modelling of Atmospheric and Ocean Processes	bepani@cusat.ac.in 0487-2428620/ 0484-2863803
5.	Dr.V.Madhu (VM) Asst. Professor	Middle Atmospheric Dynamics, Tropical Meteorology	madhuv@cusat.ac.in 9495424310/ 0484-2863814
6.	Ignatius Kunjumon (IK) Asst. Professor	Computer Applications	ik@cusat.ac.in 9495428946
7.	Dr. Venu G Nair (VGN) Lecturer – on - contract	Tropical Meteorology	venunairg@rediffmail.com 9447474779

DEPARTMENT OF CHEMICAL OCEANOGRAPHY

M.Sc. (Hydrochemistry)

Semester I

Course Code	Paper	C/ECredits	Faculty	Pre requisites
COD 2101	Concepts in Theoretical Chemistry	C 4	NC	Graduate in Chemistry
COD 2102	Stereochemistry and Reaction Mechanism	C 4	SM	- do -
COD 2103	Coordination Chemistry	C 4	JC, CHS	- do -
COD 2104	Quantitative Chemical Analysis (Practical)	C 2	SM	- do -
COD 2105	Analytical Techniques (Practical)	C 2	CHS	- do -

Semester II

Course Code	Paper	C/ECredits	Faculty	Pre requisites
COD 2201	Thermodynamics and Surface Phenomena	C 4	NC	Graduate in Chemistry
COD 2202	General Chemical Oceanography	C 4	SM/NC/ JC	Chemistry as one of the subsidiaries in B.Sc
COD 2203	Water Quality Analysis (Practical)	C 2	CHS	- do -
COD 2204	Separation and Synthetic Methods (Practical)	C 2	SM	Graduate in Chemistry

Semester III

Course Code	Paper	C/ECredits	Faculty	Pre requisites
COD 2301	Solution Chemistry	C 4	NC	Graduate in Chemistry
COD 2302	Chemistry of Natural Products	C 4	SM	- do -
COD 2303	Physico-chemical Methods (Practical)	C 2	NC	- do -
COD 2304	Instrumentation Techniques (Practical)	C 2	SM	- do -

Semester IV

Course Code	Paper	C/ECredits	Faculty	Pre requisites
COD 2401	Dissertation	C 14		
	Viva Voce	C 2		

The following elective papers (4 Credits) will be offered by the Department

1. Analytical Techniques in Seawater Analysis
2. Instrumental Methods in Chemistry - 1

3. Instrumental Methods in Chemistry - 2
4. Aquatic Pollution and Impact Assessment
5. Aquatic Chemical Resources
6. Water Management
7. Atmospheric chemistry
8. Chemistry of Nanomaterials
9. Chemistry of Marine Natural Products

Elective papers will be given Code No. that is in continuation to the code number of Core Papers in the respective semesters.

Details of Faculty

Sl.No	Name & Designation	Specialisation	Communication
1.	Dr.N. Chandramohanakumar (NC) Professor & Head	Chemical Oceanography, Analytical Techniques, Theoretical & Physical Chemistry	0484- 2537140 chandramohan@cusat.ac.in
2.	Dr.Jacob Chacko (JC) Professor	Chemical Oceanography, Analytical Techniques, Coordination Chemistry	0484 – 2540699 jchacko@cusat.ac.in
3.	Dr.S. Muraleedharan Nair (SM) Reader	Chemical Oceanography, Analytical Techniques, Organic Chemistry	0484- 2345357 muralis@cusat.ac.in
4.	Dr.C.H.Sujatha (CHS) Sr. Lecturer	Chemical Oceanography, Analytical Techniques, Inorganic Chemistry	0484- 2304722 drchsujatha@yahoo.co.in

**DEPARTMENT OF MARINE BIOLOGY AND
MICRO BIOLOGY AND BIOCHEMISTRY**

M.Sc. (Marine Biology)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
MBO 2101	Marine Biology-I	C	4	SBN, AKJ	—
MBO 2102	Cytology & Genetics	C	4	AVS, AMH	—
MBO 2103	Biochemistry-I	C	4	BP	—
MBO 2107	Marine Biology-I (Practical)	C	2	SBN, AKJ	—
MBO 2108	Biochemistry -I (Practical)	C	2	BP	—

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
MBO 2201	Marine Microbiology	C	4	AVS, RP	—
MBO 2202	Biochemistry-II	E	4	BP	MBO-2103
MBO 2203	Planktonology	E	4	SBN, AKJ	MBO-2101
MBO 2204	Principles of Biotechnology	E	4	AVS, RP, AMH	MBO-2102, MBO-2103
MBO 2207	Instrumentation (Practical)	C	2	BP/AVS	—
MBO 2208	Marine microbiology (Practical)	C	2	AVS, RP, AMH	—
MBO 2209	Biological Oceanography	E	2	SBN, AMH	—

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
MBO-2301	Fish & Fisheries	C	4	AKJ	MBO-2101
MBO-2302	General Animal Physiology	C	4	AMH	—
MBO-2303	Marine Pollution	C	4	RP, SBN	MBO-2101
MBO-2304	Marine Biotechnology	E	4	AMH, RP, AVS	MBO-2204
MBO-2305	Marine Botany	E	4	AVS, SBN	MBO-2101
MBO-2306	Fish & Fisheries (Practical)	C	2	AKJ	—
MBO-2307	Physiology & Cytology (Practical)	C	2	AMH, AVS, RP	—

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
MBO-2401	Fish Pathology	C	4	RP, AMH	MBO-2101
MBO-2402	Aquaculture	C	4	AKJ	MBO-2101
MBO-2403	Marine Ecology	C	4	SBN	MBO-2101

MBO-2404	Dissertations	C		All teachers	—
MBO-2405	Marine Ecology & Aquaculture (Practical)	C	2	AKJ, SBN	—
MBO-2406	Field Trip (Practical)	C	2	Two teachers to be deputed	

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1.	Dr. Aneykutty Joseph (AKJ) Professor	Marine Biology	Phone-0484-2393564 ; 9744265966 aneykuttyj@yahoo.co.in
2.	Dr. Babu Philip (BP) Professor	Marine Biochemistry	Phone-9847746810 babuphilip@cusat.ac.in , drbabuphilip@gmail.com
3.	Dr. A.V. Saramma (AVS) Reader	Microbiology	Phone-0484-2408789 saramma@cusat.ac.in
4.	Dr. Rosamma Philip (RP) Sr. Lecturer	Marine Microbiology	Phone-0484-2303632 rose@cusat.ac.in
5.	Dr. S. Bijoy Nandan (SBN) Reader	Marine Ecology	Phone-9446022880 bijoynandan@yahoo.co.in
6.	Dr. A.A. Mohammed Hatha (AMH) Reader	Fish Pathology	Phone-0484-2505099 mohammedhatha@cusat.ac.in hatha@gmail.com

DEPARTMENT OF MARINE GEOLOGY AND MARINE GEOPHYSICS

M.Sc. (Marine Geology)

Semester I

Course Code	Paper	Core/Elective	Credits
MGO 2101	Mineralogy	Core	3
MGO 2102	Igneous & Metamorphic Petrology	Core	3
MGO 2103	Structural Geology	Core	3
MGO2104	Invertebrate and Micro Paleontology	Core	3
MGO 2105	Mineralogy (Practical)	Core	1
MGO 2106	X-Ray Mineralogy (Practical)	Core	1
MGO 2107	Petrology (Practical)	Core	1
MGO 2108	Structural Geology (Practical)	Core	1
MGO 2109	Paleontology (Practical)	Core	1

Semester II

Course Code	Paper	Core/Elective	Credits
MGO 2201	Stratigraphy	Core	3
MGO 2202	Ground Water Geology	Core	3
MGO 2203	Economic Geology	Core	3
MGO 2204	Geochemistry	Core	3
MGO 2205	Economic Geology (Practical)	Core	1
MGO 2206	Geological Mapping (Practical)	Elective	1
MGO 2207	Geology in Coastal Zone Management	Elective	3
MGO 2208	Paleoceanography & Climate	Elective	3
MGO 2209	Geological Exploration Techniques	Elective	3
MGO 2210	Geomorphology	Elective	3
MGO 2211	Geochemistry (Practical)	Core	1

Semester III

Course Code	Paper	Core/Elective	Credits
MGO 2301	Geology of the Ocean Floor	Core	3
MGO 2302	Sedimentary Geology	Core	3
MGO 2303	Geophysics and Offshore Exploration	Core	3
MGO 2304	Submarine Geomorphology (Practical)	Core	1
MGO 2305	Sedimentology (Practical)	Core	1
MGO 2306	Applied Micropaleontology	Elective	3
MGO 2307	Environmental Geology	Elective	3
MGO 2308	Clays and Clay minerals	Elective	4
MGO 2309	Geoenvironments of Mangroves	Elective	3
MGO 2310	Engineering Geology	Elective	3

Semester IV

Course Code	Paper	Core/Elective	Credits
MGO2401	Coastal Process and Evolution	Core	3
MGO 2402	Marine Sediments	Core	3
MGO 2403	Marine Mineral Resources	Core	3
MGO 2404	Coastal Geology (Practical)	Core	1
MGO 2405	Project Work	Core	6
MGO 2406	Isotope Geology	Elective	4

M.Sc Marine Geophysics

Semester I

Course Code	Paper	Core/Elective	Credits
MGP 2101	Electronics for Instrumentation	Core	3
MGP 2102	General Geology	Elective	3
MGP 2103	Physics of the Earth	Core	3
MGP 2104	Magnetic Prospecting	Core	3
MGP 2105	Computations in Earth Sciences (Practical)	Core	2
MGP 2106	Electronics (Practical)	Core	2

Semester II

Course Code	Paper	Core/Elective	Credits
MGP 2201	Structural Geology & Stratigraphy	Core	4
MGP 2202	Gravity Prospecting	Core	3
MGP 2203	Ground Water Geophysics	Core	3
MGP 2204	Digital Signal Processing	Core	3
MGP 2205	Geophysical Computation – I (Practical)	Core	2
MGP 2206	Geology (Practical)	Core	1
MGP 2207	Digital Signal Processing (Practical)	Core	2
MGP 2208	Electrical and Electromagnetic Methods	Elective	3

Semester III

Course Code	Paper	Core/Elective	Credits
MGP 2301	Marine Geology	Core	3
MGP 2302	Seismology & Seismic Prospecting	Core	3
MGP 2303	Well Logging	Core	3

MGP 2304	Sub Bottom Sampling Techniques and Shipboard Training(Practical)	Core	1
MGP 2305	Geophysical Field Work (Practical)	Core	1
MGP 2306	Geophysical Computations-II (Practical)	Core	2
MGP 2307	Marine Geology (Practical)	Core	1
MGP 2308	Marine Mineral Resources	Elective	3

Semester IV

Course Code	Paper	Core/Elective	Credits
MGP 2401	Offshore Exploration	Core	3
MGP 2402	Geodynamics	Core	3
MGP 2403	Project Work	Core	6
MGP 2404	Remote Sensing	Elective	3
MGP 2405	Microprocessor & PC Based Instrumentation	Elective	3
MGP 2406	Petroleum Geology	Elective	3

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1.	Dr. M. Ravisankar (MR) Reader	Laser Attenuation & Optoelectronic Instrumentation	0484-2577493 ravisankarmurugan@yahoo.com
2.	Dr. C.G. Nambiar (CGN) Professor	Geochemistry, Mineralogy, Petrology	0484-2779478 nambiar@cusat.ac.in
3.	Dr. P. Seralathan (PS) Professor	Marine Geochemistry, Sedimentology	0484 -2577864 pseran@yahoo.com
4.	Dr. K. Sajan (KS) Professor	Estuarine and Marine Mineralogy & Geochemistry	0484-2575335 kuriansajan@cusat.ac.in
5.	K R Baiju Lecturer	Petrology Geochemistry	krbaiju@cusat.ac.in

DEPARTMENT OF PHYSICAL OCEANOGRAPHY

M.Sc. Oceanography

Semester I

Course Code		Paper	Credits	Faculty	Pre requisites
OCE2101	Introductory Physical Oceanography	4	PKS	GLMP	
OCE2102	Geophysical Fluid Dynamics	3	CL/Guest	GLMP	
OCE2103	Ocean Instrumentation	3	RS	GS	
OCE2104	Ocean Observation (Practical)	1	RS	GS	
OCE2105	Oceanographic Computations (Practical)	1	ANB	GS	

Semester II

Course Code		Paper	Credit	Faculty	Pre-Requisites
OCE2201	Ocean Dynamics	4	CL/Guest	2101, 2102	
OCE2202	Ocean-Atmosphere Interaction	4	PKS	2101, 2102	
OCE2203	Coastal and Estuarine Oceanography	3	ANB	2101	
OCE2204	Dynamical Computations –I (Practical)	2	CL/Guest	2201	
OCE2205	Coastal Oceanography (Practical)	2	RS	2203	

Semester III

Course Code		Paper	Credit	Faculty	Pre-Requisites
OCE2301	Ocean Remote Sensing	3	CL/Guest	2101	
OCE2302	Ocean Modeling	4	CL/Guest	2201	
OCE2303	Waves and Tides	3	RS	2101	
OCE2304	Computer Applications in Oceanography (Practical)	2	PKS	Student of Oceanography	

Semester IV

Course Code		Paper	Credit	Faculty	Pre-Requisites
OCE2401	Project Dissertation	16			

List of Electives

Code	Course Title	Credits	Faculty	Pre requisites
OCE E 01	General Oceanography	2	CL/Guest	GS
OCE E 02	Marine Hazards	2	ANB	GS
OCE E 03	Marine Pollution	2	ANB	GS
OCE E 04	Ocean Optics	2	CL/Guest	2101
OCE E 05	Marine Acoustics	4	CL/Guest	2101
OCE E 06	Coastal Zone Management - I	2	ANB	GS

OCE E 07 Coastal Zone Management - II	2	ANB	E06
OCE E 08 Beach Dynamics	2	RS	2101
OCE E 09 GIS in Oceanography	2	ANB	GS
OCE E 10 Computer Programming in Oceanography (P)	2	PKS	GS
OCE E 11 Numerical Methods (Practical)	2	PKS	E10
OCE E 12 Computer Programming in C (Practical)	2	PKS	GS
OCE E 13 Ocean Engineering	4	RS	2101, 2203
OCE E 14 Climate Change	2	ANB	GS
OCE E 15 Estuarine Sediment Dynamics	2	CL/Guest	2203
OCE E 16 Ocean Circulation	2	PKS	2201
OCE E 17 Remote Sensing Applications (Practical)	2	CL/Guest	2301
OCE E 18 Dynamical Computations - II (Practical)	2	CL/Guest	2204
OCE E 19 Marine Remote Sensing applications	4	CL/Guest	GS
OCE E20 Regional Oceanography	3	CL/Guest	2101/E01GLMP -

GS - Graduate in Science

ANB - Dr. A. N. Balchand, RS - Dr. R. Sajeew, PKS - Sri. P. K. Saji

M Tech. (Ocean Technology)

Semester I

Course Code	Paper C/E	Credit	Faculty	Pre-Requisites
OCE 3101 Introductory Oceanography	C 3	CL	BT,ES,MG,MMGP, MP,MM	
OCE 3102 Coastal Engineering	C 4	RS	OTS	
OCE 3103 Practical – I	C 2	RS	OTS	

Semester II

Course Code	Paper C/E	Credits	Faculty	Pre requisites
OCE 3201 Advanced Applied Oceanography	C 4	RS	OTS	
OCE 3202 Environmental Ocean Technology	C 3	ANB	OTS	
OCE 3203 Practical – II	C 2	PKS	OTS	

List of Electives

Code	Course Title	Credits	Faculty	Pre requisites
OCE E301 Ocean Dynamics		4	PKS	MO,MMGP,MP,MM,BT
OCE E302 Boundary Layer Dynamics		4	CL	OTS, MM
OCE E303 Marine Pollution		4	ANB	OTS
OCE E304 Ocean Resources		4	ANB	MO, MMGP, MM, MG
OCE E305 Ocean Instrumentation		4	CL	OTS, ME

OCE E306 Integrated Coastal Zone Management	4	RS	OTS
OCE E307 Ocean Acoustics	4	CL	MO, MP
OCE E308 Satellite Oceanography	4	CL	OTS, MM, ES, BT
OCE E309 Ocean Material Technology	4	CLOTS, BT, BTNASB, BTME	
OCE E310 Observational Techniques & Instrumentation	4	CLMO, MMGP, MP, MM, ME	
OCE E311 Oceans & Climate Change	3	ANB	OTS
OCE E312 Numerical Modelling	2	PKS	MO, MM
OCE E313 Ocean Dredging Technology	2	CL	OTS
OCE E314 Deep Sea Submersibles & Exploration	2	ANB	OTS, BTNASB

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
OCE 3301 Project Dissertaion & Mid Term Evaluation		C	18		

Semester IV

Course Code	Paper	C/ECredits	Faculty	Pre requisites
OCE3401 Project Dissertation, Evaluation and Viva-Voce		C	18	

MO	-	M.Sc. OCEANOGRAPHY	BT	-	B.Tech Civil / Environmental Science
MMGP	-	M.Sc. Marine Geophysics	ES	-	M.Sc. Environmental Science
MM	-	M.Sc. Meteorology	MG	-	M.Sc. Marine Geology
MP	-	M.Sc. Physics	ME	-	M. Sc. Electronics
OTS	-	M. Tech. Ocean Technology Students	BTME	-	B.Tech Mechanical Engineering
BTNASB	-	B.Tech Naval Architecture & Ship Building			

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1.	Dr. A. N. Balchand (ANB) Professor	Environmental Oceanography	Ph. Off: 0484-2363950 anb@cusat.ac.in
2.	Dr. R. Sajeev (RS) Associate Professor & Head	Coastal Oceanography	Ph. Off: 0484-2363950 rsajeev@cusat.ac.in
3.	Shri. P. K. Saji (PKS) Assistant Professor	Ocean circulation	Ph. Off: 0484-2363950 pksaji@cusat.ac.in

FACULTY OF SCIENCE

DEPARTMENT OF APPLIED CHEMISTRY

M.Sc. (APPLIED CHEMISTRY)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
CHE 2101	Theoretical Chemistry	C	4	KSK/CL	B.Sc.Chemistry
CHE 2102	Inorganic Chemistry-I	C	4	MRP/CL	B.Sc.Chemistry
CHE 2103	Organic Chemistry-I	C	3	MN	B.Sc.Chemistry
CHE 2104	Physical Chemistry-I	C	4	CL	B.Sc.Chemistry
CHE 2105	Organic Chemistry (Practical)	C	2	PMS/CL	B.Sc.Chemistry
CHE 2106	Inorganic Chemistry (Practical)	C	2	MRP/CL	B.Sc.Chemistry
CHE 2107	Viva-Voce				

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
CHE 2201	Analytical Chemistry	C	4	PVM	B.Sc.Chemistry
CHE 2202	Inorganic Chemistry-II	C	4	MRP	B.Sc.Chemistry
CHE 2203	Organic Chemistry-II (Reactions & Mechanisms)	C	3	PMS	B.Sc.Chemistry
CHE 2204	Physical Chemistry-II	C	4	CL	B.Sc.Chemistry
CHE 2205	Analytical Chemistry (Practical)	C	2	GK	B.Sc.Chemistry
CHE 2206	Physical Chemistry (Practical)	C	2	CL	B.Sc.Chemistry
CHE 2207	Synthetic Organic Chemistry	C	2	SP	B.Sc.Chemistry
CHE 2208	Viva-Voce				

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
CHE 2301	Instrumental Methods of Analysis	C	4	GK	B.Sc.Chemistry
CHE 2302	Spectroscopy-I	E	2	CL	B.Sc.Chemistry
CHE 2303	Chemistry of Natural Products	E	4	PMS/PAU	B.Sc.Chemistry
CHE 2304	Green Chemistry	E	4	GK	B.Sc.Chemistry
CHE 2305	Microbial Technology	E	4	PVM	B.Sc.Chemistry
CHE 2306	Industrial Catalysis	E	4	CL	B.Sc.Chemistry
CHE 2307	Polymers: Chemistry of Modern Materials	E	4	KSK	B.Sc.Chemistry
CHE 2308	Instrumental Methods of Analysis (Practical)	E	2	PVM	B.Sc.Chemistry

CHE 2309	Drugs: Natural and Synthetic	E	4	SP	B.Sc.Chemistry
CHE 2310	Chemistry of Perfumes and Flavours	E	4	PAU	B.Sc.Chemistry
CHE 2311	Bio Inorganic Chemistry	E	4	MRP	B.Sc.Chemistry
CHE 2312	Spectroscopy - II	E	2	SP	B.Sc.Chemistry

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
CHE 2401	Dissertation	C	16		The project work, extending to the whole Semester, is carried out at National R&D laboratories.
CHE 2402	Viva-Voce	C			

M.Tech. (Industrial Catalysis)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
CHE 3101	Adsorption and Catalysis	C	4	KSK	M.Sc.Chemistry
CHE 3102	Catalyst Technology- I	C	4	CL	M.Sc.Chemistry
CHE 3103	Physical Methods in Catalysis-I	C	4	CL	M.Sc.Chemistry
CHE 3104	Chemical Reaction Engineering	E	3	CL	M.Sc.Chemistry
CHE 3105	Enzyme Catalysis	E	3	CL	M.Sc.Chemistry
CHE 3106	Electro Catalysis	E	3	CL	M.Sc.Chemistry
CHE 3107	Lab course	C	2	KSK	M.Sc.Chemistry
CHE 3108	Viva-Voce (External)	C			M.Sc.Chemistry

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
CHE 3201	Physical Methods in Catalysis-II	C	4	KSK	M.Sc.Chemistry
CHE 3202	Catalysis by Metal Complexes	C	4	CL	M.Sc.Chemistry
CHE 3203	Catalyst Technology-II	C	4	CL	M.Sc.Chemistry
CHE 3204	Industrial Catalytic Processes	E	3	KSK	M.Sc.Chemistry
CHE 3205	Phase Transfer Catalysis	E	3	KSK/CL	M.Sc.Chemistry
CHE 3206	Polymer supported Catalysis	E	3	CL	M.Sc.Chemistry
CHE 3207	Lab Course	C	2	KSK	M.Sc.Chemistry

CHE 3208	Viva voce (End Semester)	C			M.Sc.Chemistry
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Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
CHE 3301	Project Progress Evaluation	C	16		M.Sc.Chemistry

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
CHE 3401	Project Dissertation Evaluation and Viva-voce	C	16		M.Sc.Chemistry

CL: Contract Lecturer.

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1	Dr.K.K.Mohammed Yusuff (KKMY) Emeritus Professor	Catalysis	0484-2577751; 3922422 yusuff@cusat.ac.in
2	Dr.S.Sugunan (SS) Emeritus Professor	Physical Chemistry	0484-2575682; 3922428 ssg@cusat.ac.in
3	Dr.M.R.Prathapachandra Kurup (MRP) Professor	Inorganic Chemistry	0484-2576904; 3922423 mrp@cusat.ac.in
4	Dr.K.Girish Kumar (GK) Professor	Analytical Chemistry	0484-2577813; 3922427 giri@cusat.ac.in
5	Dr.K.Sreekumar (KSK) Professor & Head	Polymer Chemistry/Catalysis	0484-2421530; 3922430 ksk@cusat.ac.in
6	Dr.S.Prathapan (SP) Associate Professor	Organic Chemistry	0484-2577384; 3922425 prathapan@cusat.ac.in
7	Dr.N. Manoj (MN) Associate Professor	Organic Chemistry	Manoj.n@cusat.ac.in 0484-2301268; 3922656
8	Dr.P.M.Sabura Begum Associate Professor	Organic Chemistry	0484-2577539; 3922426 pmsabura@cusat.ac.in
9	Dr.P.V.Mohan (PVM) Assistant Professor	Analytical Chemistry	0484-2508947; 3922429 paunni@cusat.ac.in
10	Dr.P.A.Unnikrishnan (PAU) Assistant Professor	Organic Chemistry	0484-2555151; 3922424 mohan@cusat.ac.in

DEPARTMENT OF BIOTECHNOLOGY

M.Sc. (Biotechnology)

Semester I

Course Subject		Instruction			
Course Code	Paper	Core/ Elective	Lecture hrs/week	Credits	Prerequisites
BTG 2101	Biochemistry	C	3	3	Nil
BTG 2102	Microbiology	C	3	3	Nil
BTG 2103	Cell biology	C	3	3	Nil
BTG 2104	Molecular Genetics	C	3	3	Nil
BTG 2105	Laboratory Techniques - I	C	20	4	Nil
BTG 2106	Molecular Biophysics	E	3	3	Nil
BTG 2107	Animal biotechnology	E	3	3	Nil
BTG2108	Environmental Biotechnology	E	3	3	Nil
Total			41	16C 9E	

Semester II

Course subject		Instruction			
Course Code	Paper	Core/ Elective	Lecture hrs/week	Credits	Prerequisites
BTG 2201	Enzymology	C	3	3	Nil
BTG 2202	Molecular Biology	C	3	3	Nil
BTG 2203	Bioprocess Technology	C	3	3	Nil
BTG 2204	Biostatistics	C	3	2	Nil
BTG 2205	Laboratory Techniques-II	C	20	4	Nil
BTG 2206	Plant biotechnology	E	3	3	Nil
BTG 2207	Marine Biotechnology	E	3	3	Nil
BTG 2208	Molecular Neurobiology	E	3	3	Nil
Total for Semester II			41	15C	

Semester III

Course subject		Instruction			
Course code	Paper	Core/ Elective	Lecture hrs/ week	Credits	Prerequisites
BTG 2301	Recombinant DNA Technology	C	3	3	Nil

BTG 2302	Immunology & Immunotechnology	C	3	3	Nil
BTG 2303	Bioethics, Biosafety and IPR	C	3	3	Nil
BTG 2304	Laboratory Techniques -III	C	20	4	Nil
BTG 2305	Bioinformatics	E	3	3	Nil
BTG 2306	Industrial Biotechnology	E	3	3	Nil
BTG 2307	Biopharmaceuticals	E	3	3	Nil
BTG 2308	Molecular virology	E	3	3	Nil
BTG 2309	Nanobiotechnology	E	3	3	Nil
Total for Semester III			44	13-C 15-E	

Semester IV

Course subject		Instruction			
Course code	Paper	Core/ Elective	Lecture hrs/ week	Credits	Prerequisites
BTG 2401	Dissertation	-	35	16	-
	Seminar	-	5		-
	Comprehensive Viva Voce	-			-
Total for Semester IV			40	16C	
GRAND TOTAL FOR M. Sc DEGREE COURSE IN BIOTECHNOLOGY				60 C 33 E	

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1. Dr. Dr.Sarita G			
1.	Dr. Sarita G Bhat(SGB) Associate Professor & Head	Microbial Biotechnology	saritagbhat@gmail.com 0484-2421510
2.	M. Chandrasekaran (MC) Professor (on	Microbial Biotechnology	mchandra@cusat.ac.in
3.	Dr. C.S Paulose(CSP). Professor	Molecular Neurobiology	0485-2812428 cspaulose@cusat.ac.in
4.	Dr. Padma Nambisan (PN) Sr. Scale Lecturer	Plant Biotechnology	padmanambisan@cusat.ac.in

DEPARTMENT OF MATHEMATICS

(2012 ADMISSIONS onwards)

Semester I

Course Code Paper	C/E	Credits	Faculty	Pre requisites
MAM 2101 Linear Algebra	C	4		
MAM 2102 Real Analysis I	C	4		
MAM 2103 Topology I	C	4		
MAM 2104 Ordinary Differential Equations	C	4		
MAM 2105 Computational Mathematical Laboratory I	C	2		
Viva Voce	C	-		
Total Credits for Semester I		18		

Semester II

Course Code Paper	C/E	Credits	Faculty	Pre requisites
MAM 2201 Algebraic Structures	C	4		
MAM 2202 Functional Analysis I	C	4		
MAM 2203 Complex Analysis I	C	4		
MAM 2204 Measure & Integration	C	4		
MAM 2205 Computational Mathematical Laboratory-II	C	2		
Viva Voce	C	-		
Total credits for Semester II		18		

Semester III

Course Code Paper	C/E	Credits	Faculty	Pre requisites
MAM 2301 Functional Analysis II	C	4		MAM 2202
MAM 2302 Complex Analysis II	C	4		MAM 2203
MAM 2303 Partial Differential Equations	C	4		
MAM 2304 Probability Theory I	C	4		
Elective	E	4		
Viva Voce	C	-		
Total credits for Semester III		20		

Semester IV

Course Code Paper	C/E	Credits	Faculty	Pre requisites
MAM 2401 Differential Geometry	C	4		
MAM 2402 Operations Research	C	4		
Elective II	E	4		
Elective III	E	4		
Viva Voce	C	-		
Project	E	4		
Total credits for Semester IV		16		

Total credits for successful completion of the course : 72

*The Elective topics will be decided according to the availability of teachers and hence its course code will be fixed only in the beginning of each Semester.

List of Elective Subjects

No.	Course Title	Pre-Requisite
1.	Discrete Mathematics	
2.	Algebraic Geometry	
3.	Topology II	Topology I
4.	Differential Topology	

5.	Real Analysis II	
6.	Fluid Mechanics I	
7.	Graph Theory	
8.	Stochastic Processes - I	
9.	Number Theory	
10.	Theory of Categories	
11.	Combinatorics	
12.	Applied Algebra	
13.	Quality Control and Forecasting Techniques	
14.	Lattices and Automata	
15.	Formal Languages and Theory of Automata	
16.	Coding Theory	
17.	Combinatorial designs	
18.	Finite Fields, Codes and Cryptosystems	
19.	Classical Mechanics	
20.	Fluid Mechanics II	Fluid Mechanics I
21.	Probability Theory II	MAM 2204
22.	Harmonic Analysis	
23.	Wavelets	Analysis & Liner Algebra
24.	Stochastic Processes - II	Stochastic Processes - I
25.	Advanced Mechanics	Classical Mechanics
26.	Stability Theory	MAM 2105
27.	Universal Algebra	MAM2101, MAM2201
28.	Rings and Algebras	MAM2101, MAM2201
29.	Lie Algebras	MAM2101, MAM2201
30.	Galois Theory of Equations	MAM2101, MAM2201
31.	Group Representation Theory	MAM2101, MAM2201
32.	Topics in Group Theory	MAM2101, MAM2201
33.	Dynamical Systems	MAM2105
34.	Coding theory and cryptography	
35.	Commutative Algebra	
36.	Internet Programming	
37.	Theory of Games	
38.	Advanced Queeing Theory	
39.	Computer Organization	
40.	Quality Control	
41.	Statistical Forecasting Techniques	
42.	Mathematics of Finance-I	
43.	Mathematics of Finance – II	
44.	Mathematical Finance	
45.	Algorithmic Graph Theory	
46.	Number Theory and Cryptography	

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1.	Dr. P.G. Romeo (PGR) Professor	Algebra	romeopg@cusat.ac.in 9447663109
2.	Dr. A. Vijayakumar (AV) Professor & Head	Graph Theory, Convexity Theory	vijay@cusat.ac.in 9447608851
3.	Dr. B. Lakshmy (BL) Associate Professor	Mathematical Statistics, Stochastic Processes, Operations Research	luck@cusat.ac.in 0484-2391655
4.	Dr. M. N. Narayanan Namboodiri Assistant Professor (MNN)	Functional Analysis, Operations Theory	nambu@cusat.ac.in 0484-2778203

DEPARTMENT OF PHYSICS

M.Sc. (Physics)

Semester I

Course Code	Paper C/E	Credits	Faculty	Pre requisites
PHY 2101 Mathematical Physics	C 4	GUEST/VCK		
PHY 2102 Classical Mechanics	C 4	SJ		
PHY 2103 Basic Solid State Physics	C 4	CSK		
PHY 2104 Basic Electronics	C 4	MRA		
PHY 2105 Experiments in General Physics	C	2MRA/BP/TKM/CSK		

Semester II

CourseCode	Paper C/E	Credits	Faculty	Pre requisites
PHY 2201 Quantum Mechanics I	C	4VCK/TKM/GUEST		
PHY 2202 Statistical Physics	C 4	SJ/TKM		
PHY 2203 Electrodynamics	C 4	RBT/TKM		
PHY 2204 Lasers and Atomic and Molecular Spectroscopy	C 4	MKJ/MJB		
PHY 2205 Experiments in General Physics	C 2	KPV/MKJ/MJB/CSK/TKM/BP/MRA		

Semester III

CourseCode	Paper C/E	Credits	Faculty	Pre requisites
PHY 2301 Quantum Mechanics II	C 4	RBT		Quantum Mechanics I
PHY 2302 Nuclear and Particle Physics	C 4	MKJ		
PHY 2303 Relativity and Astrophysics	C 4	TKM		
PHY 2304 Advanced Practical (Lab Course)	C 2	SJ/MRA/CSK/MJB/BP/MKJ		
Elective I	E 4			

Semester IV

CourseCode	Paper C/E	Credits	Faculty	Pre requisites
PHY 2401 Project	C 4			
Elective II	E 4			
Elective III	E 4			
Elective IV	E 4			
PHY 2430 Elective V	E 4			

Elective Courses

Course No.	Course	C/E	Credits	Faculty	Pre requisites
05	Solid State Physics – I	E	4	KPV	
06	Solid State Physics – II	E	4	KPV	
07	Electronics – I	E	4	MRA	
08	Electronics – II	E	4	MRA	
09	Industrial Physics – I	E	4	KPV	
10	Industrial Physics – II	E	4	KPV	
11	Quantum Electronics – I	E	4	MJB	
12	Opto Electronics	E	4	MJB	
13	Advanced Mathematical Physics	E	4	RBT /VCK	
14	Nonlinear Dynamics and Chaos	E	4	VCK	
15	Quantum Field Theory	E	4	RBT/VCK	
16	Solar Cells	E	4	KPV	
17	Modern Optics	E	4	CSK	
18	Thin Film Physics	E	4	BP	
19	Solid State Devices and Applications	E	4	BP	
20	Physics of Nanostructured Materials	E	4	MRA/MKJ	
21	Quantum Computation and Information	E	4	TKM	
22	Advanced Magnetism and Magnetic Materials	E	4	MRA	
23	Molecular Physics and Laser Spectroscopy	E	4	MJB/MKJ	
24	Synthesis and Characterization of Materials	E	4	MRA	
25	Quantum Optics	E	4	RBT	
26	Nonlinear Optics	E	4		
27	Remote Sensing	E	4	MRA	
28	Digital Signal Processing	E	4	MRA	
29	Numerical Methods in Computational Physics	E	4	MRA	
30	Advanced Practical (Lab Course)	E	4	BP/ MRA/CSK	

Elective Course phy 2430 Advanced Practical (Lab Course) will be offered only in Semester IV. Other Elective Papers will be offered either in Semester III or in Semester IV depending upon the availability of teachers. The Course Code for the Elective Papers will be assigned at the time the course is offered.

Every theory course consists of lectures of **five** hours per week. The internal evaluation consists of student seminars, periodic class tests and a viva – voce at the end of the semester.

Each Lab course consists of **nine** hours per week and duration of practical examination is: phy 2105, phy 2205 and phy 2304 – 4 hours each

Phy 2430 – 6 hours

Project Work has **Five** hours per week. Project report will be evaluated by the supervising guide and another faculty member of the Department nominated by the Department Council. Three copies of the project report should be submitted in advance for evaluation. Project evaluation consists of a Viva – Voce examination also.

Details of Faculty

Dr. K.P. Vijayakumar (KPV) Professor	Thin film solar cells, Semiconductor studies	0484-2577103 kpv@cusat.ac.in
Dr. B. Pradeep Professor & Head	Thin Film Technology, Compound Semi Conducting Thin Films	0484 – 2575953 bp@cusat.ac.in
Dr. Ramesh Babu T. Professor	Nuclear Particle Physics, Quantum Optics	0484 – 2576194 rbt@cusat.ac.in
Dr. L. Godfrey (LG), Professor, (On deputation as PVC, CUSAT)	Experimental Solid State Physics and Astrobiology	0484-2806344 godfrey@cusat.ac.in
Dr. M.R. Anantharaman (MRA) Professor	Condensed Matter Physics, Polymer Physics, Nano Structured Materials	0484-2577404 mra@cusat.ac.in
Dr. C. Sudha Kartha (CSK) Professor	Holography, Semiconducting thin films	0484-2577103 csk@cusat.ac.in
Dr. M.K. Jayaraj (MKJ) Professor	Opto-electronic devices, transparent electronics, nano materials	0484-2575543 mkj@cusat.ac.in
Dr. S. Jayalekshmi (SJ) Professor	Polymers LED, Rechargeable Li ion cells, Nanophotonics, non-linear optics	0484-2538830 jayalekshmi@cusat.ac.in
Dr. M. Junaid Bushri (MJB) Associate Professor	Semiconducting thin films, nanomaterials, Laser spectroscopy	0471- 2435271 junaidbusbri@cusat.ac.in
Dr. Titus K Mathew (TKM) Associate Professor	Cosmology, Gravitation, Quantum mechanics	9995438460 titus@cusat.ac.in

DEPARTMENT OF STATISTICS

M.Sc (Statistics)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
STA 2101	Mathematical Methods for Statistics	C	4	NB	
STA 2102	Probability Theory I	C	4	SMS	
STA 2103	Probability Distributions	C	4	PGS	
STA 2104	Sampling Theory and Methods	C	4	GF	
STA 2105	Elective I	E	3	GF	

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
STA 2201	Statistical Inference I	C	4	PGS	
STA 2202	Probability Theory II	C	4	NB	
STA 2203	Stochastic Processes	C	4	VKR	
STA 2204	Practical – I and Viva-Voce	C	3	SMS	
STA 2205	Elective II	E	3		

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
STA 2301	Statistical Inference II	C	4	PGS	
STA 2302	Multivariate Analysis	C	4	SMS	
STA 2303	Applied Regression Analysis	C	4	NB	
STA 2304	Practical – II using SPSS / MATLAB and Viva Voce	C	3	GF	
STA 2305	Elective III	E	3	AG	

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
STA 2401	Design and Analysis of Experiments	C	4	PGS	
STA 2402	Statistical Quality Assurance	C	4	AG	
STA 2403	Practical – III using SAS / R and Viva Voce	C	3	SMS	
STA 2404	Elective IV	E	3		
STA 2405	Elective V	E	3		

List of Electives Faculty

1. Actuarial Statistics – SMS
2. Advanced Distribution Theory - SMS
3. Advanced Probability Theory - NB
4. Advanced Stochastic Processes - NB
5. Applied Multivariate Statistical Analysis - NB
6. Applied Statistics for National Development- PGS
7. Complex Analysis and Integral Transforms – PGS
8. Demographic Techniques - SMS

9. Directional Data Analysis - PGS
10. Inference for Stochastic Processes - PGS
11. Operations Research - SMS
12. Reliability Modelling and Analysis - AG
13. Statistical Computing - KCJ
14. Statistical Decision Theory – PGS
15. Statistical Forecasting - PGS
16. Statistical Genetics - SMS
17. Stochastic Finance - NB
18. Survival Analysis - AG
19. Time Series Analysis – NB

Electives for other Post Graduate Courses

Course Code	Title of Paper	Credits
STA 2111	Applied Statistics	4
STA 2112	Bio-Statistics	4
STA 2113	Basic Statistics	4
STA 2114	Descriptive Statistics	4
STA 2115	Statistical Methods	4
STA 2116	Statistical Quality Control	4
STA 2117	Statistical Techniques in Economics	4

**M.Tech (Engineering Statistics)
Semester I**

Course Code	Course	C/E	Credits	Faculty	Pre requisites
STA 3101	Basic Statistics	C	4	GF	
STA 3102	Reliability & Life Testing	C	4	AG	
STA 3103	Practical I	C	2	KCJ	
STA 3104	Seminar and Viva	C	-	KCJ	
STA 3105	Simulation Modeling and Analysis	E	4	KCJ	
STA 3106	Statistical Methods for Quality Assurance	E	4	SMS	
STA 3107	Total Quality Management	E	4	KCJ	
STA 3108	Operations Research	E	4	GF	
STA 3109	Management and Maintenance of Information Systems	E	4	KCJ	
STA 3110	Production Planning and Control	E	4	KCJ	
STA 3111	Manufacturing Processes and Measurements for Quality	E	4	KCJ	

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
STA 3201	Industrial Experimental Design	C	4	AG	
STA 3202	Forecasting and Decision	C	4	NB	
STA 3203	Practical II	C	2	KCJ	
STA 3204	Seminar and Viva	C	-	KCJ	
STA 3205	Methods Engineering	E	4	KCJ	
STA 3206	Engineering Maintainability	E	4	KCJ	
STA 3207	E-commerce	E	4	KCJ	
STA 3208	Software Quality Management	E	4	KCJ	
STA 3209	Multivariate Methods	E	4	VKR	
STA 32010	Statistical Inference	E	4	VKR	

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
STA 3301	Project Progress Evaluation	C	18	KCJ	

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
STA 3401	Project Dissertation Evaluation and Viva Voce	C	18	KCJ	

GF – Guest Faculty

Details of Faculty

Sl. No.	Name & Designation	Specialisation	Communication
1.	Dr. V. K. Ramachandran Nair (VKR) Professor	Queuing Theory, Probability Distributions, Stochastic Processes and Multivariate Analysis	0482 -2241531 ram@cusat.ac.in 9446861810
2.	Dr. N. Balakrishna (NB) Professor	Stochastic Processes and Inference, Time Series Models, Data analysis, Chaos and nonlinear time series	0484 - 2555497 nb@cusat.ac.in 9446605682
3.	Dr. K. C. James (KCJ) Associate Professor & Head	Industrial Engineering, DE Simulation, Reliability, TQM	0484-2475767 jamesmech@cusat.ac.in 9446605183
5.	Dr. Asha Gopalakrishnan (AG) Associate Professor	Distribution Theory, Discrete Reliability Theory	0484-2347051 0484-2335390 asha@cusat.ac.in 9447220353
6.	Dr. S. M. Sunoj (SMS), Associate Professor	Distribution Theory, Reliability Theory.	0487-2428214 smsunoj@cusat.ac.in 9446627103

FACULTY OF SOCIAL SCIENCES

DEPARTMENT OF APPLIED ECONOMICS

MA (Applied Economics)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ECO 2101	Micro Economics I	C	4	PKM	
ECO 2102	Macro Economics I	C	4	MB	
ECO 2103	Mathematical Methods for Economics	C	4	DR	
ECO 2104	Statistics for Economic Analysis	C	4	PA	
ECO 2105	Indian Economy	C	4	SH	

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ECO 2201	Micro Economics II	C	4	PKM	
ECO 2202	Macro Economics II	C	4	MB	
ECO 2203	Econometrics	C	4	DR	
ECO 2204	Optional	E	4	SH	
ECO 2205	International Economics	C	4	PA	

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ECO 2301	Development Economics	C	4	SH	
ECO 2302	Quantitative Optimisation Techniques	C	4	DR	
ECO 2303	Public Economics	C	4	MB	
ECO 2304	Optional	E	4	PKM	
ECO 2305	Research Methodology	C	4	PA	

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
ECO 2401	Optional	E	4		
ECO 2402	Optional	E	4		
ECO 2403	Optional	E	4		
ECO 2404	Project Report	C	4		
ECO 2405	Comprehensive Viva Voce	C	4		

Optional Papers

1. Advanced Econometrics
2. Agricultural Economics
3. Industrial Economics-MB
4. Kerala Economy
5. Portfolio Management
6. Project Planning & Appraisal
7. Social Exclusion and Inclusive Policy Studies-DR
8. Marketing Management
9. Human Resources Management-PKM
10. International Finance -PA
11. Environmental Economics-SH
12. Financial institutions and Markets

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1.	Dr. D. Rajasenan(DR) Professor	Econometrics and Resource Economics	0484-2575479 rajasenan@cusat.ac.in
2.	Dr. S. Harikumar(SH) Professor	Agricultural Economics Environmental Economics	0484-2338289 9446578289 vinvij2003@gmail.com , shari@cusat.ac.in
3.	Dr. P. Arunachalam(PA) Professor	Quantitative Techniques and International Trade	0484-2290376 arunachalam@cusat.ac.in
4.	Dr. M. Meera Bai (MB) Reader & Head	Industrial Economics and Gender Studies	0484-2575289 meerabai@cusat.ac.in
5.	Dr. Manoj P. K. (PKM) Lecturer	Production Engineering and Management, Accounting and Law, MIS, Financial and Risk Management, Management Science	0484-2645233 (R) 09447664949 (M) manoj_p_K2004@yahoo.co.in

SCHOOL OF MANAGEMENT STUDIES

“Prior to 2012 admissions”

MBA (Full Time)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMS 2101	Management Concepts and Organizational Behaviour	C	3	ZKA	
SMS 2102	Quantitative Methods	C	3	ST	
SMS 2103	Managerial Economics	C	3	KBP	
SMS 2104	Business Environment	C	3	JM	
SMS 2105	Business Communication	C	3	KKN	
SMS 2106	Financial Accounting	C	3	MKM	
SMS 2107	Information Technology for Managers	C	3	MB	
	Managerial Skill Development	C	-		

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMS 2201	Organization Effectiveness and Change	C	3	GF	
SMS 2202	Management Science	C	3	VPJ/ME	
SMS 2203	Human Resource Management	C	3	DM	
SMS 2204	Financial Management	C	3	PRW	
SMS 2205	Marketing Management	C	3	MPK	
SMS 2206	Management Information System	C	3	ST	
SMS 2207	Research Methodology.	C	3	SRM	
SMS 2208	Management Accounting	C	3	KKN	

* Compulsory one-month organizational study during summer vacation.

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMS 2301	Production & Operations Management	C	3	ME	
SMS 2302	Business Law	C	3	GF	
SMS 2303	Environment and Management	C	3	CVJ	
SMS 2304	Organizational Analysis and Processes	C	3	SRM	
SMS 2305	Indian Ethos and Business Ethics	C	3	DM	
SMS 2306	Entrepreneurial Development	C	3	PRW	
SMS 2307	Elective – I	E	3		
SMS 2308	Elective – II	E	3		

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMS 2401	Business Policy and Strategic Management	C	3	CAF	
SMS 2402	Elective III	E	3		
SMS 2403	Elective – IV	E	3		
SMS 2404	Elective – V	E	3		
SMS 2405	Project Report	C	3		
SMS 2406	Viva Voce	C	3		

MBA (International Business)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMI 2101	Management Concepts and Organisational Behaviour	C	3	SRM	
SMI 2102	Human Resources Management	C	3	DM	
SMI 2103	Managerial Economics	C	3	GF	
SMI 2104	Quantitative Methods	C	3	ST	
SMI 2105	Financial and Cost Accounting	C	3	RKS	
SMI 2106	Marketing Management	C	3	ZKA	
SMI 2107	Information Technology for Managers	C	3	GF	
	Managerial Skill Development	C	-	ZAK	

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMI 2201	Accounting for Managerial Decision	C	3	KKN	
SMI 2202	Financial Management	C	3	PRW	
SMI 2203	International Economics	C	3	GF	
SMI 2204	International Business Environment	C	3	JM	
SMI 2205	International Marketing	C	3	CAF	
SMI 2206	E. Business	C	3	GF	
SMI 2207	Export Import Procedures & Documentation	C	3	GF	
SMI 2208	Management Science	C	3	ME/VPJ	

* Compulsory one-month organizational study during summer vacation.

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMI 2301	Operations Management	C	3	ME	
SMI 2302	International Logistics Management	C	3	MB	
SMI 2303	International Finance	C	3	RKS	
SMI 2304	Business Communication	C	3	KKN	
SMI 2305	International Marketing Research	C	3	MPK	
SMI 2306	Elective - I	E	3		
SMI 2307	Elective - II	E	3		

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMI 2401	International Strategic Management	C	3	KBP	
SMI 2402	International Business Law	C	3	GF	
SMI 2403	Elective III	E	3		
SMI 2404	Elective IV	E	3		
SMI 2405	Elective V	E	3		
SMI 2406	Project Report	C	3		
SMI 2407	Viva Voce	C	3		

MBA (Part Time)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2101	Management Concepts and Organizational Behaviour	C	3	ZKA	
SMP 2102	Quantitative Methods	C	3	ST	
SMP 2103	Managerial Economics	C	3	GF	
SMP 2104	Business Environment	C	3	JM	
SMP 2105	Financial Accounting	C	3	RKS	

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2201	Organization Effectiveness and Change	C	3	GF	
SMP 2202	Information Technology for Managers	C	3	ST	
SMP 2203	Financial Management	C	3	RKS	
SMP 2204	Marketing Management	C	3	MPK	
SMP 2205	Management Accounting	C	3	KKN	

* Compulsory one-month organizational study during summer vacation.

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2301	Indian Ethos & Business Ethics	C	3	DM	
SMP 2302	Environment and Management	C	3	CVJ	
SMP 2303	Organisational Analysis and Processes	C	3	SRM	
SMP 2304	Business Communication	C	3	KKN	
SMP 2305	Management Science	C	3	VPJ/ME	

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2401	Human Resource Management	C	3	DM	
SMP 2402	Production and Operation Management	C	3	ME	
SMP 2403	Research Methodology	C	3	SRM	
SMP 2404	Business Law	C	3	GF	
SMP 2405	Management Information System	C	3	GF	

Semester V

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2501	Entrepreneurial Development	C	3	PRW	
SMP 2502	Elective I	E	3		
SMP 2503	Elective – II	E	3		
SMP 2504	Elective – III	E	3		

Semester VI

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2601	Business Policy and Strategic Management	C	3	CAF	
SMP 2602	Elective IV	E	3		
SMP 2503	Elective V	E	3		
SMP 2604	Project Report	C	3		
SMP 2605	Viva – Voce	C	3		

*GF – Guest Faculty

Note: 40% minimum marks required in all papers for internal as well as external examinations in addition to 50% in total for a pass.

I. FINANCE

1. FINANCIAL DERIVATIVES
2. FINANCING OF SMALL BUSINESS
3. CORPORATE RESTRUCTURING
4. INTERNATIONAL FINANCIAL MANAGEMENT
5. INTERNATIONAL ECONOMIC ORGANISATIONS
6. INDUSTRIAL FINANCE - JM
7. MANAGEMENT OF FINANCIAL SERVICES - RKS
8. MANAGEMENT CONTROL SYSTEM
9. PROJECTS PLANNING, ANALYSIS AND MANAGEMENT - PRW
10. SECURITY ANALYSIS AND INVESTMENT MANAGEMENT - RKS
11. WORKING CAPITAL MANAGEMENT
12. CORPORATE TAXATION - RKS
13. PORTFOLIO MANAGEMENT
14. FINANCIAL DECISIONS ANALYSIS
15. INTERNATIONAL ACCOUNTING
16. INTERNATIONAL FINANCIAL MARKETS
17. FOREIGN EXCHANGE MANAGEMENT
18. INFRASTRUCTURE FINANCE

II. MARKETING

1. CONSUMER BEHAVIOUR - MPK
2. ADVERTISING MANAGEMENT - GF
3. E-COMMERCE (Only for MBA)
4. MARKETING RESEARCH - ME
5. STRATEGIC MARKETING - MPK
6. INTERNATIONAL MARKETING (Only for MBA)
7. SALES FORCE MANAGEMENT - ZKA
8. MARKETING OF SERVICES - MKM
9. BRAND MANAGEMENT
10. PLANNING AND MANAGING RETAIL BUSINESS - ME
11. SALES PROMOTION MANAGEMENT
12. INDUSTRIAL MARKETING
13. MARKETING FOR NON-PROFIT ORGANIZATIONS
14. MANAGEMENT OF PUBLIC DISTRIBUTION SYSTEM
15. MARKETING OF SOCIAL SERVICES

III. HUMAN RESOURCE

1. STRATEGIC HUMAN RESOURCES MANAGEMENT
2. MANAGEMENT OF INDUSTRIAL RELATIONS - SRM
3. MANAGEMENT TRAINING AND DEVELOPMENT - CVJ
4. LABOUR LEGISLATIONS (Only for MBA)
5. PARTICIPATIVE MANAGEMENT
6. GLOBAL HUMAN RESOURCE MANAGEMENT
7. COMPENSATION MANAGEMENT
8. HUMAN RESOURCE PLANNING AND DEVELOPMENT
9. ORGANIZATIONAL CHANGE AND INTERVENTION STRATEGIES
10. MANAGING INTERPERSONAL AND GROUP PROCESSES
11. COUNSELING SKILLS FOR MANAGERS

12. MANAGEMENT OF COMPARATIVE INDUSTRIAL RELATIONS
13. MANPOWER DEVELOPMENT FOR TECHNOLOGICAL CHANGE
14. LEGAL FRAMEWORK GOVERNING HUMAN RELATIONS (**Only for MBA (IB)**)
15. HUMAN RESOSURCE DEVELOPMENT: STRATGEGIES AND SYSTEMS
16. MANAGEMENT DEVELOPMENT

IV. PRODUCTION AND OPERATIONS MANAGEMENT

1. SUPPLY CHAIN MANAGEMENT - VPJ
2. PURCHASING AND MATERIALS MANAGEMENT
3. QUALITY MANAGEMENT - MB
4. PRODUCTION PLANNING AND CONTROL
5. APPLIED OPERATTIONS RESEARCH
6. LOGISTICS MANAGEMENT
7. GOAL PROGRAMMING IN MANAGEMENT
8. TRANSPORTATION MANAGEMENT
9. SERVICE OPERATIONS MANAGEMENT
10. WORLD CLASS MANUFACTURING

V. INFORMATION TECHNOLOGY MANAGEMENT

1. ENTERPRISE RESOURCE PLANNING - VPJ
2. STRATEGIC MANAGEMENT OF INFORMATION TECHNOLOGY
3. DATA BASE MANAGEMENT SYSTEMS
4. MANAGEMENT SUPPORT SYSTEMS
5. BUSINESS PROCESS RE-ENGINEERING
6. SYSTEM ANALYSIS AND DESIGN
7. MANAGEMENT INFORMATION SYSTEM (**Only for MBA(IB)**)
8. THE TELECOMMUNICATIONS FOR BUSINESS
9. SECURITY AND CONTROL INFORMATION SYSTEM
10. MULTIMEDIA MANAGEMENT
11. INTERNET PROGRAMMING FOR E-COMMERCE
12. APPLICATION DEVELOPMENT USING ORCALE

VI. INTERNATIONAL BUSINESS

1. EXPORT IMPORT PROCEDURES, DOCUMENTATION AND LOGISTICS (**Only for MBA**)
2. INTERNATIONAL ECONOMIC ORGANISATIONS
3. INDIA'S FOREIGN TRADE POLICY

VII SMALL BUSINESS AND ENTREPRENEURSHIP DEVELOPMENT MANAGEMENT

1. GOVERNMENT BUSINESS INTERFACE
2. SMALL BUSINESS MARKETING
3. FINANCING OF SMALL BUSINESS
4. NEW ENTERPRISE MANAGEMENT
5. SMALL BUSINESS ENVIRONMENT AND MANAGEMENT

VIII HEALTH CARE ADMINISTRATION

1. COMMUNITY HEALTH, EPIDIMEOLOGY & POPULATION MANAGEMENT

2. HEALTH CARE AND SOCIAL POLICY
3. HEALTH SYSTEMS MANAGEMENT
4. HEALTH CARE ECONOMICS AND FINANCE
5. ENVIRONMENTAL HEALTH MANAGEMENT AND SAFETY PLANNING
6. HEALTH AND HOSPITAL INFORMATION SYSTEMS
7. HEALTH COMMUNICATION ; DEVELOPMENT AND DISSEMINATION

IX PUBLIC SYSTEM MANAGEMENT

1. PUBLIC ENTERPRISE MANAGEMENT
2. FINANCIAL MANAGEMENT IN PUBLIC SYSTEMS
3. ENERGY MANAGEMENT
4. HOTEL MANAGEMENT
5. TOURISM MANAGEMENT
6. DEVELOPMENT ADMINISTRATION
7. WATER RESOURCE MANAGEMENT
8. MARKETING OF SOCIAL SERVICES
9. PLANNING AND MANAGEMENT OF EDUCATION SYSTEMS
10. MANPOWER POLICY AND PLANNING FOR PUBLIC SYSTEMS
11. MANAGEMENT OF TELECOMMUNICATION SYSTEMS

X RURAL AND URBAN MANAGEMENT

1. CO-OPERATIVE MANAGEMENT
2. RURAL CREDIT AND FINANCE
3. RURAL RESOURCES AND DEVELOPMENT
4. RURAL INDUSTRIALISATION
5. PARTICIPATORY DEVELOPMENT IN RURAL AREAS
6. RURAL MARKETING
7. WASTE LAND MANAGEMENT
8. URBANISATION IN INDIA
9. URBAN ORGANISATION AND MANAGEMENT
10. URBAN PLANNING AND STRATEGIES FOR DEVELOPMENT
11. URBAN DEVELOPMENT AND REGIONAL PLANNING

XI TECHNOLOGY MANAGEMENT

1. MANAGEMENT OF SCIENCE AND TECHNOLOGY
2. TECHNOLOGY ACQUISITION AND DIFFUSION
3. TECHNOLOGY FINANCE
4. TECHNOLOGY TRANSFER AND ABSORPTION
5. TECHNOLOGY FORECASTING
6. R & D MANAGEMENT
7. PROGRAMME MANAGEMENT

XII GENERAL MANAGEMENT

1. REGIONAL BLOCKS
2. GOVERNMENT BUSINESS INTERFACE
3. GLOBAL ECONOMY (Only for MBA)

MBA (Travel & Tourism)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMT 2101	Tourism Principles & Practices	C	3	JM	
SMT 2102	Economics for Tourism	C	3	GF	
SMT 2103	Accounting & Finance	C	3	MKM	
SMT 2104	Quantitative Techniques & Operations Management	C	3	ST	
SMT 2105	Principles of Management	C	3	CVJ	
SMT 2106	Human Resources Management	C	3	ZAK	
SMT 2107	I. T. for Managers	C	3	GF	
	Managerial Skill Development		Non Credit		

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMT 2201	Research Methodology	C	3	PRW	
SMT 2202	Global Tourism Geography	C	3	MKM	
SMT 2203	Airline Management	C	3	GF	
SMT 2204	Organisational Behaviour	C	3	ZAK	
SMT 2205	Business & Tourism Law	C	3	GF	
SMT 2206	Business and Tourism Environment	C	3	ME	
SMT 2207	Marketing Management for Tourism	C	3	ME	
SMT 2208	Logistics and Supply Chain Management	C	3	VPJ	

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMT 2301	Entrepreneurial Development	C	3	PRW	
SMT 2302	Hospitality & Resort Management	C	3	MKM	
SMT 2303	Safety, Security & Crisis Management in Travel & Tourism Industry	C	3	GA	
SMT 2304	Management of Travel Agency & Tour Operations	C	3	GF	
SMT 2305	Tourism Marketing	C	3	MPK	
SMT 2306	Management Information Systems	C	3	GF	
SMT 2307	Elective - I	E	3		
SMT 2308	Elective - II	E	3		
	Soft Skills		Non Credit		

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
SMT 2401	Business Policy and Strategic Management	C	3	KBP	
SMT 2402	Elective I	E	3		
SMT 2403	Elective II	E	3		
SMT 2404	Elective III	E	3		
SMT 2405	Project Report	C	3		
SMT 2406	Viva Voce	C	3		

Note : 40% Minimum marks required in all papers for internal as well as external examinations in addition to 50% in total for a pass

List of Electives

- | | |
|--|---------------------------------|
| 1) Quality Management | 8) Marketing Research - ME |
| 2) Tour Package Management - GF | 9) Marketing of Services – MKA |
| 3) Customer Relationship Management - ME | 10) Advertising Management - GF |
| 4) Project Planning, Analysis & Management - PRW | 11) Industrial Finance - JM |
| 5) Destination Management - GF | 12) Consumer Behaviour - MPK |
| 6) Database Management System | 13) Cargo Management |
| 7) Enterprise Resource Planning – VPJ | |

SCHOOL OF MANAGEMENT STUDIES, CUSAT**MBA (FULL-TIME) PROGRAMME (2012 ADMISSION ONWARDS)****FIRST SEMESTER**

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMS 2101	Management Concepts and Organizational Behaviour	C	3	ZKA	
SMS 2102	Quantitative Techniques	C	3	SAM	
SMS 2103	Managerial Economics	C	3	KBP	
SMS 2104	Business Communication	C	3	KKN	
SMS 2105	Financial Accounting	C	3	MKMA	
SMS 2106	Business Environment	C	3	JM	
SMS 2107	Indian Ethos and Business Ethics	C	3	DM	
	Managerial Skill Development	C	Nil		
	Semester Viva-Voce (Internal)	C	Nil		

SECOND SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMS 2201	Financial Management	C	3	PRW	
SMS 2202	Marketing Management	C	3	MPK	
SMS 2203	Operations Management	C	3	ME	
SMS 2204	Human Resource Management	C	3	DM	
SMS 2205	Management Accounting	C	3	KKN	
SMS 2206	Research Methodology	C	3	SRM	
SMS 2207	Business Law	C	3	GF	
SMS 2208	Information Technology for Managers	C	3	MB	
	Semester Viva-Voce (Internal)	C	Nil		

THIRD SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMS 2301	Management Science	C	3	VPJR	
SMS 2302	Organisational Analysis and Processes	C	3	SRM	
SMS 2303	Entrepreneurial Development	C	3	PRW	
SMS 2304	International Finance	C	3	RKS	

	Elective – 1	E	3	VPJR	
	Elective – 2	E	3	MKMA/ME	
	Elective – 3	E	3		
	Project Report based on Summer Internship	C	Nil		
	Semester Viva-Voce (Internal)	C	Nil		

FOURTH SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMS 2401	Business Policy and Strategic Management	C	3	GF	
SMS 2402	Environment Management	C	3	CVJ	
SMS 2403	Independent Research Study	C	3		
	Elective – 4	E	3	VPJR	
	Elective – 5	E	3	SRM	
	Elective – 6	E	3	ZKA	
	Comprehensive Viva-Voce with external examiners	C	3		

MBA (PART-TIME) PROGRAMME

FIRST SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2101	Management Concepts and Organizational Behaviour	C	3	ZKA	
SMP 2102	Quantitative Techniques	C	3	SAM	
SMP 2103	Managerial Economics	C	3	GF	
SMP 2104	Indian Ethos and Business Ethics	C	3	DM	
SMP 2105	Financial Accounting	C	3	RKS	

SECOND SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2201	Business Environment	C	3	JM	
SMP 2202	Marketing Management	C	3	MPK	
SMP 2203	Human Resource Management	C	3	DM	
SMP 2204	Management Accounting	C	3	KKN	
SMP 2205	Financial Management	C	3	PRW	

THIRD SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2301	Business Communication	C	3	KKN	
SMP 2302	Management Science	C	3	ME	

SMP 2303	Organizational Analysis and Processes	C	3	SRM	
SMP 2304	Information Technology for Managers	C	3	GF	
SMP 2305	International Finance	C	3	RKS	

FOURTH SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2401	Research Methodology	C	3	SRM	
SMP 2402	Operations Management	C	3	ME	
SMP 2403	Business Law	C	3	GF	
SMP 2404	Environment Management	C	3	CVJ	
	Elective – 1	E	3		

FIFTH SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2501	Entrepreneurial Development	C	3	PRW	
SMP	Elective – 2	E	3		
SMP	Elective – 3	E	3		
SMP	Elective – 4	E	3		
	Project Report on summer internship	C	Nil		

SIXTH SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMP 2601	Business Policy and Strategic Management	C	3	MB	
SMP 2602	Independent Research Study	C	3		
	Elective – 5	E	3		
	Elective – 6	E	3		
	Comprehensive Viva-Voce with external examiners	C	3		

MBA (INTERNATIONAL BUSINESS) PROGRAMME

FIRST SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMI 2101	Management Concepts and Organizational Behaviour	C	3	SRM	
SMI 2102	Quantitative Techniques	C	3	SAM	
SMI 2103	Managerial Economics	C	3	KBP	
SMI 2104	Business Communication	C	3	KKN	

SMI 2105	Financial Accounting	C	3	RKS	
SMI 2106	Business Environment	C	3	JM	
SMI 2107	Indian Ethos and Business Ethics	C	3	GF	
	Managerial Skill Development	C	Nil		
	Semester Viva-Voce (Internal)	C	Nil		

SECOND SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMI 2201	Financial Management	C	3	PRW	
SMI 2202	Marketing Management	C	3	ZKA	
SMI 2203	Operations Management	C	3	ME	
SMI 2204	Human Resource Management	C	3	DM	
SMI 2205	Management Accounting	C	3	KKN	
SMI 2206	Research Methodology	C	3	SRM	
SMI 2207	Business Law	C	3		
SMI 2208	Information Technology for Managers	C	3		
	Semester Viva-Voce (Internal)	C	Nil		

THIRD SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMI 2301	International Finance	C	3	RKS	
SMI 2302	Management Science	C	3	ME	
SMI 2303	International Marketing	C	3	MPK	
SMI 2304	Entrepreneurial Development	C	3	PRW	
SMI 2305	Export and Import – Policies and Procedures	C	3	GF	
	Elective - 1	E	3	VPJR	
	Elective - 2	E	3	MKM/	
	Project Report based on Summer Internship	C	Nil		
	Semester Viva-Voce (Internal)	C	Nil		

FOURTH SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMI 2401	International Strategic Management	C	3	KBP	
SMI 2402	Environment Management	C	3	CVJ	
SMI 2403	International Logistics Management	C	3	MB	
SMI 2404	Independent Research Study	C	3	VPJR/ZKA/ME	
	Elective – 3	E	3	SRM	
	Elective – 4	E	3		
	Comprehensive Viva-Voce with external examiners	C	3		

MBA (TRAVEL AND TOURISM) PROGRAMME

FIRST SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMT 2101	Management Concepts and Organizational Behaviour	C	3	ZKA	
SMT 2102	Quantitative Techniques	C	3	GF	
SMT 2103	Managerial Economics	C	3	GF	
SMT 2104	Business Communication	C	3	KKN	
SMT 2105	Financial Accounting	C	3	MKMA	
SMT 2106	Business Environment	C	3	JM	
SMT 2107	Indian Ethos and Business Ethics	C	3	GF	
	Managerial Skill Development	C	Nil		
	Semester Viva-Voce (Internal)	C	Nil		

SECOND SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMT 2201	Financial Management	C	3	PRW	
SMT 2202	Marketing Management	C	3	MPK	
SMT 2203	Operations Management	C	3	GF	
SMT 2204	Human Resource Management	C	3	ZKA	
SMT 2205	Management Accounting	C	3	MKMA	
SMT 2206	Research Methodology	C	3	GF	
SMT 2207	Principles and Practices of Tourism	C	3	JM	
SMT 2208	Information Technology for Managers	C	3		
	Semester Viva-Voce (Internal)	C	Nil		

THIRD SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMT 2301	Global Tourism Geography	C	3	GF	
SMT 2302	Entrepreneurial Development	C	3	PRW	
SMT 2303	International Business Law	C	3	GF	
SMT 2304	Hospitality and Resort Management	C	3	MKMA	
SMT 2305	Safety and Crisis Management	C	3	GF	
	Elective - 1	C	3	VPJR/ME	
	Elective - 2	C	3		
	Project Report based on Summer Internship	C	Nil		
	Semester Viva-Voce (Internal)	C	Nil		

FOURTH SEMESTER

Course code	Paper	C/E	Credits	Faculty	Pre requisites
SMT 2401	Business Policy and Strategic Management	C	3	KBP	
SMT 2402	Environment Management	C	3	CVJ	
SMT 2403	Airline Management	C	3	GF	
SMT 2404	Destination Management Tour Report and Viva Voce (Based on compulsory study tour)	C C	1 ½ 1 ½		
SMT 2405	Independent Research Study	C	3		
	Elective - 3	C	3		
	Comprehensive Viva-Voce with external examiners	C	3		

Note: 40% minimum marks required in all papers for internal as well as external examinations in addition to 50% in total for a pass.

LIST OF ELECTIVES MBA(Full-time), MBA (Part-time), MBA (International Business) and MBA (Travel and Tourism)

Concentration Areas/Functional or Sectoral Streams MARKETING

1. Consumer Behaviour
2. Advertising and Promotion Management
3. E-Commerce
4. Marketing Research
5. Strategic Marketing
6. International Marketing (Only for MBA (Full-time) and MBA (Part-time) Programmes)
7. Sales Management
8. Services Marketing
9. Brand and Product Management
10. Retail Management
11. Industrial Marketing
12. Distribution Management
13. Customer Relationship Management
14. Digital Marketing
15. Marketing Analytics
16. Strategic Marketing for Non-profit Organisations

FINANCE

- | | |
|---|--------------------------------|
| 1. Industrial Finance | 5. Financial Derivatives |
| 2. Working Capital Management | 6. Corporate Restructuring |
| 3. Corporate Taxation | 7. Financing of Small Business |
| 4. Security Analysis and Portfolio Management | 8. Banking Services |

HUMAN RESOURCE MANAGEMENT

1. Strategic Human Resource Management
2. Management of Industrial Relations
3. Management Training and Development
4. Global Human Resource Management
5. Compensation Management
6. Human Resource Planning and Development
7. Organisational Change and Intervention Strategies
8. Managing Interpersonal and Group Processes
9. Human Resource Development: Strategies and Systems
10. Performance Management

INFORMATION TECHNOLOGY MANAGEMENT

1. Enterprise Resource Planning
2. Strategic Management of Information Technology
3. Data Base Management Systems
4. Business Process Reengineering
5. System Analysis and Design
6. Technical Foundation for E-Business
7. Data Mining for Business Intelligence
8. Advanced Data Analytics for Business Decisions
9. Technology Management

PRODUCTION AND OPERATIONS MANAGEMENT

1. Supply Chain Management
2. Purchasing and Materials Management
3. Quality Management
4. International Logistics Management (Only for MBA (Full-time) and MBA (Part-time))
5. Service Operations Management
6. Project Management

INTERNATIONAL BUSINESS

1. Quality Management
2. Service Operations Management
3. Purchasing and Materials Management
4. Project Management
5. Supply Chain Management
6. Enterprise Resource Planning
7. Global Human Resource Management
8. Working Capital Management

TRAVEL AND TOURISM

1. Cargo Management
2. Flight Operations Management
3. Tour Package Management
4. Management of Travel Agency and Tour Operations
5. Service Operations Management
6. Quality Management in Service Industry

GENERAL

1. Corporate Social Responsibility
2. Management of NGOs
3. Simulation and Modelling

Faculty Members

Sl.No	Name	Designation	Qualification	Specialization
1	Dr. P.R. Wilson	Professor	M.Com., Ph.D.	Financial Management
2	Dr. K.B. Pavithran	Professor	M.Com, PGDBA, Ph. D.	Finance/Accounting/Strategic Management
3	Dr. C.V. Jayamani	Professor	M.Com., Ph.D.	General Management, Finance
4	Dr. M. Bhasi	Professor & Director	M.Tech., Ph.D.	Operations Management, EDP, Materials Management
5	Dr. James Manalel	Professor	M.B.M., Ph.D.	Finance Management, Banking, Management of Small Business
7	Dr. Sebastian Rupert Mampilly	Professor	M.S.W., M.B.A., Ph.D.	HRM, Organisational Behaviour and Industrial Relations, Research Methodology
7	Dr. Moli P. Koshy	Professor	M.Sc., M.B.A., Ph.D.	Marketing Management, Marketing Research, Consumer Behaviour, Strategic Marketing Entrepreneurship
8	Dr. K. Krishnan Nampoothiri	Associate Professor	M.Com., Ph.D.	Accounting, Banking, Co-operation, Business Communication, Finance
9	Dr. Jagathy Raj V. P.	Associate Professor	M.Tech., M.B.A.,DSADP, Ph.D.	Systems and Operations Management - Logistics, Supply Chain Management, IT Applications in Business and Management, ERP,MIS, Engineering and Technology Management.
10	Dr. Rajitha Kumar S.	Associate Professor	M.Com., M.Phil., Ph.D.	Finance and General Management
11	Dr. D. Mavoothu	Associate Professor	M.B.A., D.L.L.. Ph.D.	HRM ,Industrial Relations and Business Ethics
12	Dr. Zakkariya K. A	Asst.Professor	M.A., M.B.A., P.G.D.I.B., Ph.D.	Organisational Behaviour, Marketing, & Sales Management, Managerial Skills Development
13	Dr. Sam Thomas	Asst.Professor	B.Tech., M.B.A., Ph.D.	Systems and Finance
14	Dr. Mohammed Aslam M. K.	Asst.Professor	M.Com., M.Phil., Ph.D	Finance Management and Accounting
15	Dr. Manoj Edward	Asst.Professor	B.Tech, M.B.A., Ph.D.	Operations and Service Management

FACULTY OF TECHNOLOGY
DEPARTMENT OF COMPUTER APPLICATIONS

MCA (Department of Computer Applications)

Semester I

Course Code	Paper	C/E	Credit	Faculty	Pre requisites
CAS2101	Combinatorics & Graph Theory	C	4		Refer Syllabus
CAS2102	Computer Organization	C	4		“
CAS2103	Programming in C	C	3		“
CAS2104	Discrete Mathematical Structures	C	3		“
CAS2105	Computer Based Optimization	C	3		“
CAS2106	Lab 1 + Viva-Voce	C	2		“

Semester II

Course Code	Paper	C/E	Credit	Faculty	Pre requisites
CAS2201	Computer Graphics	C	3		Refer Syllabus
CAS2202	Data Structures using C	C	3		“
CAS2203	System Software	C	3		“
CAS2204	Applied Numerical Analysis	C	3		“
CAS2205	Elective 1	E	3		“
CAS2206	Lab 2 + Viva-Voce	C	2		“

Semester III

Course Code	Paper	C/E	Credit	Faculty	Pre requisites
CAS2301	Computer Algorithms	C	4		Refer Syllabus
CAS2302	Data Base Management Systems	C	3		“
CAS2303	Object oriented Programming with C++	C	4		“
CAS2304	Software Engineering	C	3		“
CAS2305	Elective 1	E	3		“
CAS2306	Lab 3 + Viva-Voce	C	2		“

Semester IV

Course Code	Paper	C/E	Credit	Faculty	Pre requisites
CAS2401	Operating System	C	4		Refer Syllabus
CAS2402	Artificial Intelligence	C	3		“
CAS2403	Elective 2	E	3		“
CAS2404	Elective 3	E	3		“
CAS2405	Mini Project Work	C	3		“
CAS2406	Lab 4 + Viva-Voce	C	2		“

Semester V

Course Code	Paper	C/E	Credit	Faculty	Pre requisites
CAS2501	Networks and Data Communications	C	4		Refer Syllabus
CAS2502	Simulation and Modeling	C	3		“
CAS2503	Elective 1	E	3		“
CAS2504	Elective 2	E	3		“
CAS2505	Elective 3	E	3		“
CAS2506	Seminar	C	3		“
	Viva-voce (Internal)	C			

Semester VI

Course Code	Paper	C/E	Credit	Faculty	Pre requisites
CAS2601	Project Work and Viva-Voce	C	16		

List of Electives

E1 - Number Theory.	E14* - Web enabled JAVA Programming
E2 - Number Theory and Cryptography.	E15 - Data Mining
E3 - Applied Probability and Statistics.	E16 - Software Project Management
E4 - Web Commerce Technologies.	E17 - Cryptography and Network Security
E5 - Object Oriented Design.	E18 - Intelligent Systems
E6 - Security in Computing.	E19 - Visual Programming VB.Net
E7 - Embedded Systems.	E20 - Digital Image Processing
E8 - Linux System Programming.	E21 - Software Quality
E9 - Java Programming.	E22 - Android Application Programming
E10 - Linux Internals.	E23 - Web Application Design using PHP
E11 - Compiler Design.	E24 - Multimedia System Design
E12 *- Advanced JAVA Programming	E25 - Microprocessor Programming
E13 *- Advanced JAVA Mobile Programming	E26 - Embedded Systems I

* Only one elective from among E12, E13 and E14 can be selected for the entire course.

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1.	Mr.A.Sreekumar (ASK) Associate Professor sreekumar@cusat.ac.in	Compiler Design, Operating System,	0484 -2576253 (O) 0484-2556057(R) Cryptography 9495427491 (M) Coding Theory
2.	Dr.K.V. Pramod (KVP) Associate Professor & Head	Simulation Modelling, Cryptography Mathematical Morphology	0484-2576253/2577602(O) 0484-2344162(R) 09895044162(M) pramodkv4@gmail.com
3.	Dr.B.Kannan (BK) Associate Professor	Graph Algorithms, Artificial Intelligence	0484 -2576253 (O) 0485-2824859(R) 09895363612(M) bkannan@cusat.ac.in
4.	Mrs. Malathi S. (MS) Senior Lecturer	Software Engineering	0484 -2576253 (O) 0484-3913535 09447325124(M) malathi_s@cusat.ac.in malathisujith@gmail.com
5.	Mr. Ajmal V. S. (AVS) Lecturer (On LWA)	Object Oriented Technology Parallel Processing	0484-2700857(R) ajmalvs@cusat.ac.in

COCHIN UNIVERSITY COLLEGE OF ENGINEERING, KUTTANADU

MCA

Semester I

Course Code	Paper C/E	Credits	Faculty Pre requisites
CAS 2101 Combinatorics & Graph Theory	C 3		Refer Syllabus
CAS 2102 Programming in C	C 3		“
CAS 2103 Data Structure using C	C 4		“
CAS 2104 Computer Organization	C 4		“
CAS 2105 Discrete Mathematical Structures	C 4		“
CAS 2106 Lab + Viva-voce	C		

Semester II

Course Code	Paper C/E	Credits	Faculty Pre requisites
CAS 2201 Computer Graphics	E 3		Refer Syllabus
CAS 2202 Elective	E 3		“
CAS 2203 Computer Algorithms	C 4		“
CAS 2204 Applied Numerical Analysis	C 4		“
CAS 2205 Computer Based Optimization	C 4		“
CAS 2206 Lab + Viva-voce	C		

Semester III

Course Code	Paper C/E	Credits	Faculty Pre requisites
CAS 2301 System Software	C 3		Refer Syllabus
CAS 2302 Database Management Systems	E 3		“
CAS 2303 Software Engineering	C 4		“
CAS 2304 Elective	E 4		“
CAS 2305 Object Oriented Programming with C++	C 4		“
CAS 2306 Lab + Viva-voce	C		

Semester IV

Course Code	Paper C/E	Credits	Faculty Pre requisites
CAS 2401 Operating System	C 4		Refer Syllabus
CAS 2402 Elective	E 3		“
CAS 2403 Elective	E 4		“
CAS 2404 Elective	E 4		“
CAS 2405 Mini Project Work	C 3		“
CAS 2406 Lab + Viva-voce	C		

Semester V

Course Code	Paper C/E	Credits	Faculty	Pre requisites
CAS 2501 Networks and Data Communication	C 4			Refer Syllabus
CAS 2502 Simulation & Modelling	E 3			“
CAS 2503 Elective	E 4			“
CAS 2504 Elective	E 3			“
CAS 2505 Elective	E 3			“
CAS 2506 Seminar	C 3			
CAS 2507 Viva-voce	C			

Semester VI

Course Code	Paper C/E	Credits	Faculty	Pre requisites
CAS 2601 Project Work and Viva-voce	C 16			

Common Electives

E1 Visual Programming	E23 VLSI		
E2 Internet and Website Design	E24 Wireless Technologies		
E3 Distributed Computing	E25 Artificial Intelligence I		
E4 Enterprise Resource Planning	E26 Artificial Intelligence II		
E5 Decision Support Systems	E27 Computational Geometry		
E6 Performance Evaluation of Computer System	E28 Geographical Information Systems		
E7 Windows Programming	E29 Network Administration		
E8 Unix Internals	E30 Embedded Technologies		
E9 Web Commerce Technologies	E31 Pattern Recognition		
E10 Parallel Computing	E32 Software Quality		
E11 Security in Computing	E33 Micro Processors		
E12 Intelligent Systems	E34 Object Oriented Design		
E13 Principles of Concurrent Programming	E35 Cryptography and Network Security		
E14 Knowledge Management	E36 Number Theory and Cryptography		
E15 Internet Standards and Protocols	E37 Advanced java Programming		
E16 Web Animation	E38 Software Testing		
E17 Active Server Pages	E39 Software Project Management		
E18 Digital Electronics and Logic Design	E40 Number Theory		
E19 Artificial Neural Networks	E41 Data Mining		
E20 Linux Internals	E42 Applied Probability & Statistics		
E21 Computer Architecture	E43 Database Management Systems		
E22 Digital Signal Processing	E44 Linux System Programming		

DEPARTMENT OF COMPUTER SCIENCE

M.Tech. Computer & Information Science

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSC 3101	Mathematical concepts for computer science	C	4	PS	
CSC 3102	Information Retrieval	C	4	SMI	
CSC 3103	Algorithms for modern data models	C	4	GSK	
	Elective I	E	3		
	Elective II	E	3		

Electives

CSC 3104	Wireless Communications & Networking			GSK	
CSC 3105	Virtualized Systems			KBM	
CSC 3106	Parallel Computing Architecture			KPJ	
CSC 3107	Intelligent Systems				

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSC 3201	Advanced Data Mining	C	4	SMI	CSC 3102
CSC 3202	Computer Vision	C	4	GF	CSC 3103
CSC 3203	Seminar	C	1		
	Elective III	E	3		
	Elective IV	E	3		
	Elective V	E	3		

Electives

CSC 3204	Bioinformatics			GF	
CSC 3205	Computational Linguistics			SMI	
CSC 3206	Adhoc Networks			GSK	CSC 3104

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSC 3301	Project & Viva Voce	C	18		

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSC 3401	Project & Viva Voce	C	18		

M. Tech. Software Engineering

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSS 3101	Software Architecture	C	4	GF	
CSS 3102	Agile Project Management	C	4	KBM	

CSS 3103	Seminar	C	1	SMI,GSK, KBM	
	Elective I	E	3		
	Elective II	E	3		
	Elective III	E	3		

Electives

CSS 3104	Patterns in Software Engineering				
CSS 3105	Agent Based Computing			SMI	
CSS 3106	Human Computer Interaction				

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSS 3201	Business Administration & Technical Communication	C	4	KPJ	
CSS 3202	Software Quality Management	C	4	SMI	
CSS 3203	Model Driven Architecture	C	4	KBM	
	Elective IV	E	3		
	Elective V	E	3		

Electives

CSS 3204	Design of Real Time / Embedded Software				
CSS 3205	Social Network Analytics				
CSS 3206	Text Mining				
CSS 3207	Enterprise Application Integration & Business Process Management				

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSS 3301	Project & Viva Voce	C	18		

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSS 3401	Project & Viva Voce	C	18		

M. Tech. Computer Science with Specialization in Embedded Systems

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSE 3101	Embedded Computer Architecture	C	4	GF: [PPV]	
CSE 3102	Real-Time Operating Systems	C	4	GF:[PS]	
CSE 3103	Software Engineering Principles	C	4	GSK	

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSE 3201	Model Driven Real-time	C	4	KPJ	

	Software				
CSE 3202	Programming Embedded System	C	4	GF:[PPV]	
	Elective I	E	4		

Electives

CSE 3203	Networked Embedded Systems	GSK
CSE 3204	Software Reliability Engineering	

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSE 3301	Real Time Digital Signal Processing	C	4	GF:[MHS]	
CSE 3302	Real Time Design Patterns	C	4	GSK	
	Elective II	E	4		

Electives

CSE 3203	Control Systems Engineering	GSK
CSE 3204	High Performance Embedded Computing	
CSE 3305	Embedded Communication Software	

Semester IV

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSS 3401	Project & Viva Voce	C	18		

Semester V

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
CSS 3501	Project & Viva Voce	C	18		

Details of Faculty

Sl. No	Name & Designation	Specialization	Communication	Intercom No
1	Dr. K. Paulose Jacob (KPJ) Professor & Head	Computer Architecture Computer Communication	0484- 2112111 0484-2862300 kpj@cusat.ac.in	2300
2	Dr. Sumam Mary Idicula (SMI) Professor	Artificial Intelligence Data Mining Computational Linguistics	0484-2577605 0484-2862305 sumam@cusat.ac.in	2305
3	Dr. G. Santhosh Kumar (GSK) Assistant Professor	Computer Networks	0484- 2212221 0484-2862306 san@cusat.ac.in	2306
4	K.B. Muralidharan (KBM) Assistant Professor	Information Management, Software Engineering	0484-2862304 kbmuralidharan@ cusat.ac.in	2301

DEPARTMENT OF ELECTRONICS
Course structure for M. Tech. (Electronics)

Semester I

Course Code	Name of the Course	C/E	Credits	Faculty
ELE 3101	Advanced Microprocessors and Systems	C	3	JK
ELE 3102	Advanced Digital Signal Processing	C	3	MHS
ELE 3103	Digital Communication	C	3	PRSP
ELE 3111	Digital System Design Using VHDL	E	3	TT
ELE 3112	VLSI Technology and Design	E	3	GUEST
ELE 3121	Microwave Networks	E	3	PM
ELE 3122	Microwave Devices and Circuits	E	3	KV/CKA
ELE 3016L	Microprocessors Laboratory	C	1	
ELE 3107 L	Digital Signal Processing Laboratory	C	1	
ELE 3116 L	VLSI Laboratory	E	1	
ELE 3126L	Microwave Devices and Circuits Lab	E	1	
Total credits required			18	

Semester II

Course No	Name of the Course	C/E	Credit	Faculty
ELE 3201	Seminar	C	1	
ELE 3202	Neural Networks	E	3	
ELE 3203	Fault Tolerance in Electronic System	E	3	GUEST
ELE 3204	Digital Image Processing	C	3	TT
ELE 3206	Embedded System Design	E	3	MHS/JK
ELE 3211	Wireless Mobile Communication	C	3	A
ELE 3213	ATM Networks	C	3	PRSP
ELE 3221	Antenna Theory	E	3	PM
ELE 3222	Radar Systems	E	3	CKA
ELE 3206 L	Digital Image Processing Lab	C	1	
ELE 3216L	Embedded System Design Lab	E	1	
ELE 3217 L	Antenna Lab	E	1	
Total credits required			18	

Semester III

Course No	Name of the Course	C/E	Credit
ELE 3301	Project Progress Evaluation	C	18

Semester IV

Course No	Name of the Course	C/E	Credit
ELE 3401	Project Dissertation Evaluation	C	18

Total credits for the course =18+18+18+18 = 72

Course structure for M.Sc (Electronic Science)

Semester I

Course No	Name of the Course	C/E	Credit	Faculty	Pre requisites
ELE 2101	Mathematical and computational Methods	C	3	CKA	B.Sc.(Physics/ Electronics)
ELE 2102	Electronics devices and circuits	C	3	GUEST	B.Sc.(Physics/ Electronics/)
ELE 2103	Network Analysis	C	3	MHS	B.Sc.(Physics/ Electronics)
ELE 2104	Digital logic design	C	3	TT	B.Sc.(Physics/ Electronics)
ELE 2105	Electromagnetics	C	3	A	B.Sc.(Physics/ Electronics)
ELE 2101L	Computer Laboratory	C	2		B.Sc.(Physics/ Electronics)
ELE 2102L	Electronics Circuits laboratory	C	2		B.Sc.(Physics/ Electronics)

Total credits required 19

Semester II

Course No	Name of the Course	C/E	Credit	Faculty	Pre requisites
ELE 2201	Microprocessors & Microcontrollers	C	3	B	
ELE 2202	Communication Electronics	C	3	GUEST	
ELE 2203	Digital Signal Processing	C	3	MHS	
ELE 2204	Control Systems	C	3	A	
ELE 2205	TV & Video systems	E	3		
ELE 2206	Introduction To Robotics	E	3	JK	
ELE 2207	Microwave Devices and Measurements	E	3	KV	
ELE 2210	Data Structures	E	3		
ELE 2201L	Microprocessor Laboratory	C	2		
ELE 2204L	Control Systems laboratory	C	2		

Total credits required 19

Semester III

Course No	Name of the Course	C/E	Credit	Faculty	Pre requisites
ELE 2301	Seminar	C	2		

ELE 2302	Introduction to Embedded systems	C	3	MHS/JK	
ELE 2303	Computer networks	C	3	B	
ELE 2304	Artificial Intelligence	E	3		ELE 2210
ELE 2305	Robotics And Intelligent Systems	E	3	JK	ELE 2208
ELE 2308	Wave guides and Antennas	E	3	PM	ELE 2207
ELE 2309	Operating System	E	3	A	
ELE 2310	Microwave Communication And Radar Systems	E	3	KV	ELE 2207
ELE 2311	Computer Organization	E	3		
ELE 2312	Computer graphics	E	2		
ELE 2313	Sensors And Actuators	E	2		ELE 2206
ELE 2302L	Microprocessor systems Laboratory	C	2		
ELE 2305L	Robotics laboratory	E	2		
ELE 2310L	Microwave Laboratory	E	2		
ELE 2312L	Computer Laboratory	E	2		

Total credits required 18

Semester IV

Course No	Name of the Course	C/E	Credit		
ELE 2401	Project evaluation and Viva Voce	C	16		

Total Credits for the Course =19+19+18+16 = 72

**M.Tech. (Electronics) with Specialization in Wireless Technology
First Semester**

Course Code	Name of Course	C/E	Credits
CWT3101	Probability and Stochastic Processes	C	3
CWT3102	Wireless Communications	C	3
CWT3103	Antenna Systems	C	3
CWT3104	Digital Communication	E	3
CWT3105	Network routing algorithms	E	3
CWT3106	Optical and wire line Technology	E	3
CWT3107	MEMS	E	3
CWT3108L	Communication Simulation Lab	C	1
CWT3109L	Communication Lab with core course	E	1
CWT3110L	Embedded Lab	E	1

Second Semester

Course Code	Name of Course	C/E	Credits
CWT3201	Cellular Mobile Communication	C	3

CWT3202	Electromagnetic Interference/ Electromagnetic Compatibility in System	C	3
CWT3203	Ad Hoc & Sensor Networks	C	3
CWT3204	Smart Antennas	E	3
CWT3205	Global Positioning Systems	E	3
CWT3206	Image and Video Processing	E	3
CWT3207	Broadband Wireless Technologies	E	3
CWT3208	Seminar	C	1
CWT3209L	Mobile Communication Lab	E	1
CWT3210L	Wireless and Ad Hoc Network Lab	E	1

Third Semester

Course Code	Name of Course	C/E	Credits
CWT3301	Project evaluation & Viva voce	C	18

Fourth Semester

Course Code	Name of Course	C/E	Credits
CWT3401	Project evaluation & Viva voce	C	18

Details of Faculty

Sl.No.	Name & Designation	Specialization	Communication	Intercom No.
1.	Dr.C.K.Aanandan (CKA) Professor & Head	Microwave Electronics/ communications	9447667267 anand@cusat.ac.in	2320
2.	Dr. P.R.S.Pillai (PRSP) Professor	Ocean Electronics Digital Communications	9847220985 prsp@cusat.ac.in	2321
3.	Dr.K.Vasudevan (KV) Professor	Microwave Electronics/ Communications	9447357328 vasudevan@cusat.ac.in	2329
4.	Dr.P.Mohanan (PM) Professor	Microwave Electronics/ Communications	9447325765 drmohan@cusat.ac.in	2339
5	Dr.Tesamma Thomas (TT) Professor	Speech/Image Processing	9446970659 tess@doe.cusat.edu	2399
6	Dr.James Kurian (JK) Associate Professor	Robotics/ Instrumentation	9447291196 james@cusat.ac.in	2326
7	Dr.M.H.Supriya (MHS) Associate Professor	Digital Signal Processing/ Ocean Electronics	9947379396 supriyah@cusat.ac.in	2324

DEPARTMENT OF POLYMER SCIENCE AND RUBBER TECHNOLOGY

M.Tech (Polymer Technology)

Semester I

Course Code	Name of the Course	C/E	Credit	Faculty	Pre requisites
POL 3101	Advanced Polymer Science	C	3	SKN	Graduate in Polymer Science/Chemical Engineering/Chemistry
POL 3102	Applied Mathematics	C	3	GF	- do -
POL 3103	Operations Management & Management Information Systems	E	2	GF	Any graduation except Arts & Humanities
POL 3104	Polymer Materials	E	2	RJ/SJS	Graduate in Science/Engineering
POL 3105	Rubber Processing and Product Manufacture	C	2	SKN/NMM	Graduate in Polymer Science/Chemical Engineering/Chemistry
POL 3106	Speciality Polymers	E	3	JG	- do -
POL 3107	Polymer Technology - Lab I	C	2	JTP	
POL 3108	Review Seminar	C	1	SGS	

SEMESTER II

Course Code	Name of the Course	Paper	C/E	Credits	Faculty	Pre requisites
POL 3201	Plastics Processing	C	3	RJ/SGS		Graduate in Polymer Science/Chemical Engineering/Chemistry
POL 3202	Advanced Polymer Rheology	C	3	KEG		- do -
POL 3203	Polymer Products Design	C	3	SKN		- do -
POL 3204	Characterisation & Testing	C	3	JTP/SGS		- do -
POL 3205	Introduction to Mould & Die Design	C	2	ETT/JG		- do -
POL 3206	Tyre Technology	E	3	TK		- do -
POL 3207	Polymer Technology Lab. II	C	1			

Semester III

Course Code	Name of the Course	Paper	C/E	Credits	Faculty	Pre requisites
POL 3301	Project Work Report & Viva Voce	C	18			

Semester IV

Course Code	Paper	C/E Credits	Faculty	Pre requisites
POL 3401	Project Work Report & Viva Voce	C 18		

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communications
1	Dr. Eby Thomas Thachil Professor (ETT)	Polymer Science / Chemical Engineering	0484-2331426 9846311380 ethachil@cusat.ac.in
2	Dr. K.E.George (KEG) Professor	Polymer Technology / Chemical Engineering	0484-2577850 9446447851 kegeorge@cusat.ac.in
3	Dr. Rani Joseph (RJ) Professor	Polymer Science / Technology	0484-2577850 9446467850 rani@cusat.ac.in
4	Dr. Philip Kurian (PK) Professor	Polymer Science / Technology	0484-2575590 9447662790 pkurian@cusat.ac.in
5	Dr. Thomas Kurian (TK) Professor	Polymer Science / Technology	0484-2575144 9847872209 tkurian@cusat.ac.in
6	Dr. Sunil.K.Narayanankutty Professor & Head (SKN)	Polymer Science / Technology	0484-2551922 9995300093 sunil@cusat.ac.in
7	Ms. Jayalatha Gopalakrishnan Lecturer (JG)	Polymer Technology	9847672916 jayalatha@cusat.ac.in

DEPARTMENT OF SHIP TECHNOLOGY

M. Tech– (Computer Aided Structural Analysis & Design)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
DST 3101	Advanced Engineering Mathematics	C	4	Contract faculty	
DST 3102	Computer Aided Design in offshore Engineering	C	4	Contract faculty	
DST 3103	Advanced Structural Analysis	C	4	CGN	
DST 3104	Elective I	E	4	Contract faculty	
DST 3105	Elective II	E	4	CGN	

Electives

1 Marine Hydrodynamics	2 Marine Corrosion and Prevention
3 Application of Stochastic Process Theory in Ocean Engineering	4 Stability of Structures
5 Fracture Mechanics	6 Marine Pollution and its effect
7 Pollution Control Techniques	8 Advanced Joining Techniques

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
DST 3201	Dynamics of Structures	C	4	Contract Faculty	
DST 3202	Finite Element Methods Applied to Offshore Engineering	C	4	CGN	
DST 3203	Elective III	E	4	Contract Faculty	
DST 3204	Elective IV	E	4	Contract Faculty	
DST 3205	Elective V	E	4	Contract Faculty	

Electives

1 Ocean Waves and Effects	2 Analysis of Special Structures
3 Design of Offshore Structures	4 Fatigue problems in Ships and Marine Structures
5 Computer Applications in Ship Manoeuvring	

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre requisites
DST 3301	Project Progress Evaluation	C	18		

Semester IV

Course Code	Paper	C/E Credits	Faculty	Pre requisites
DST 3401	Project Dissertation Evaluation and Viva Voce	18		

Details of Faculty

Sl.No.	Name & Designation	Specialisation	Communication
1	Dr. Dileep K. Krishnan (DKK) Reader	Ship Manoeuvrability, Resistance and Propulsion	dileep@cusat.ac.in 0484-3942482
2	Dr.K.P.Narayanan (KPN) Reader and Head	Ship structures and Strength	narayanan@cusat.ac.in 0484-2575870
3	Dr. C.G. Nandakumar Reader (CGN)	Structural Analysis Finite Element Method	nandu@cusat.ac.in 9447463475
4	Mr. James Joseph Kattady (KJ) Reader	Thermodynamics	Marine Engineering,
5	Dr. S. K. Pyarilal (SKP) Reader	Ship Design	9846022253
6	Dr. K. Roby (KR) Reader	Naval Architecture Computer Scienc	roby@cusat.ac.in 0484 - 2575410
7	Mrs. Mariamma Chacko (MC) mariamma@cusat.ac.in Reader	and Electronics	Electrical Engineering 0484-2577226
8	Dr.K.Sivaprasad (KSP) Reader	Ship Building Technology 0484-2575601	sivaprasad@cusat.ac.in
9	Dr.A. Mathiazhagan (AM) Senior Lecturer	Material Science and Corrosion Engineering	alagan@cusat.ac.in 9447434901
10	Dr. C.B. Sudheer (CBS) Lecturer On Leave	Production Engineering, Ship Production, CAD/CAM	sudheer@cusat.ac.in 0484 – 2396194

INTERNATIONAL SCHOOL OF PHOTONICS

M.Tech (Opto-electronics & Technology)

Semester I

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
ISP 3101	Modern Optics	C	4	SR	
ISP 3102	Laser Technology	C	4	VCP	
ISP 3103	Opto-electronics	C	4	MK	
ISP 3104	Industrial Management	C	1	KCJ	
ISP 3105	Lab Course I	C	3	----	
ISP 3106	Communication Technology	E	3	PR	

Semester II

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
ISP 3201	Fibre Optics & Applications	C	4	MK	
ISP 3202	Lab Course II	C	3	----	
ISP 3203	Mini Project Seminar etc.	E	1	----	
Any 3 of the following electives					
ISP 3204	Laser Applications	E	3	PR	
ISP 3205	Non-Liner Optics etc	E	3	VPN	
ISP 3206	Digital Communications	E	3	MK	
ISP 3207	Industrial Photonics	E	3	VCP	
ISP 3208	Advanced Laser Systems	E	3	PR	

Semester III

Course Code	Paper	C/E	Credits	Faculty	Pre-requisites
ISP 3301	Project Progress Evaluation	C	18		
ISP 3401	Project Dissertation Evaluation and Via-Voce	C	18		

Details of Faculty

Sl.No	Name & Designation (Residence)	Specialisation	Communication
1.	Dr. C.P. Girijavallabhan (CPG) Emeritus Professor	Opto-electronics and Laser Spectroscopy	0484-2346869 vallabhan@cusat.ac.in
2.	Dr. V.P.N. Nampoori (VPN) Emeritus Professor	Laser Spectroscopy and Non-linear Optics	0484-2576263 vapnampoori@gmail.com
3.	Dr. P. Radhakrishnan (PR) Professor	Laser Technology & Fiber Optics	0484-2604811 radhak@cusat.ac.in
4.	Dr. M. Kailasnath (MK) Assistant Professor & Director	Fibre Optics	0484-2494347 kailas@cusat.ac.in
5.	Dr. S. Rajesh (SR) (Contract Lecturer)	Dynamics	0484-2685062 rajeshsivan@gmail.com
6.	Ms. V. C. Priyamvada (VCP) (Contract Lecturer)	Industrial Photonics	9847081504 priyamvadapradeep@gmail.com
7.	Dr. K C James (KCJ) (Asso.Prof. Statistics Department)	Industrial Management	9446605183 jamesmch@cusat.ac.in

DEPARTMENT OF INSTRUMENTATION

M.Sc (Instrumentation)

First Semester

Course Code	Name of the Course	C/E	Credit	Hours/Week		
				Lect.	Lab	Tuto
INS 2101	Applied Mathematics	C	3	4	--	1
INS 2102	Introduction to Instrumentation systems	C	3	4	--	1
INS 2103	Sensors, Transducers and Actuators	C	3	4	--	--
INS 2104	Electronic Devices and Circuits	C	3	4	--	--
INS 2105	Digital Electronics	C	3	4	--	--
INS 2101L	Computer Science Lab.	C	2	--	4	--
INS 2102L	Analog Electronics Lab.	C	2	--	4	--

Total Credits – 19

Second Semester

Course Code	Name of the Course	C/E	Credit	Hours/Week		
				Lect.	Lab	Tuto
INS 2201	Microprocessors and Instrumentation	C	3	4	--	1
INS 2202	Optical Instrumentation	C	3	4	--	1
INS 2203	Control System	C	3	4	--	--
INS 2204	Elective - 1	E	3	4	--	--
INS 2205	Elective - 2	E	3	4	--	--
INS 2201L	Sensors and signal conditioning Lab	C	2	--	4	--
INS 2202L	Digital Electronics Lab	C	2	--	4	--

Total Credits – 19

Third Semester

Course Code	Name of the Course	C/E	Credit	Hours/Week		
				Lect.	Lab	Tuto
INS 2301	Signal Processing	C	3	4	--	1
INS 2302	Analytical Methods and Instrumentation	C	3	4	--	1
INS 2303	Elective - 3	E	3	4	--	--

INS 2304	Elective - 4	E	3	4	--	--
INS 2305	Elective – 5	E	3	4	--	--
INS 2306	Seminar	C	1	2	--	--
INS 2301L	Control Systems and process control lab	C	1	--	3	--
INS 2302L	Microprocessor and interfacing lab	C	1		3	--

Total Credits – 18

Fourth Semester

Course Code	Name of the Course	C/E	Credit	Hours/Week		
				Lect.	Lab	Tuto
INS 2401	Project work and Viva-Voce	C	16	--	16	

Total Credits – 16

Credits for Core (C) courses: $16+16+9+16 = 57$

Credits for Elective (E) courses: $0+6+9 = 15$

Total credits for the course: 72

List of Electives

1. Materials Science
2. Vacuum Techniques and Instrumentation
3. Biomedical Instrumentation
4. MEMS and Microsystems
5. Modern Control Systems
6. Process Control
7. Microcontroller and Computer based Instrumentation.

Details of Faculty

Sl.No:	Name & Designation	Specialization	Intercom	Communication
1	Dr. Stephen Rodrigues Associate Professor & Head	Microwave Electronics/Comm unication	2350	9497485565 roderig@cusat.ac.in
2	Dr. K Rajeev Kumar Associate Professor	Vacuum Technology/Cryog enics/Transducers	2359	9447040323 rajeev@cusat.ac.in
3	Dr. Jorney Issac Assistant Professor	Control System/Process Control	2357	9446206218 jorney@cusat.ac.in
4	Dr. K N Madhusoodanan Associate Professor	Analytical Instrumentation	2353	9349406334 madhu@cusat.ac.in

Members of the Academic Committee (2009-2011)

1. Pro Vice Chancellor : Chairman
2. Registrar : Secretary
3. Controller of Examination : Vice Chairman
4. Dr. K P Vijayakumar : Department of Physics
5. Dr. Ammini Joseph, School of Environmental Studies
6. Dr. K Vanaja, Department of Hindi
7. Ms. Brinda Bala Sreenivasan, Department of Culture & Heritage
8. Dr. V S Sebastian, School of Legal Studies
9. Dr. A Ramachandran, School of Industrial Fisheries
10. Dr. H S Ram Mohan, Department of Atmospheric Sciences
11. Dr. C H Sujatha, Department of Chemical Oceanography
12. Dr. Rosamma Philip, Department of Marine Biology, Microbiology & Biochemistry
13. Dr. K R Baiju, Department of Marine Geology & Geophysics
14. Sri. P K Saji, Department of Physical Oceanography
15. Dr. S Prathapan, Department of Applied Chemistry
16. Dr. C S Paulose, Department of Biotechnology
17. Dr. R S Chakravarthi, Department of Mathematics
18. Dr. K Muraleedharan Nair, Department of Statistics
19. Dr. M Bhasi, School of Management Studies
20. Dr M Meera Bai, Department of Applied Economics
21. Dr. B Kannan, Department, of Computer Applications
22. Dr. Sumam Mary Idiula, Department of Computer Sciences
23. Dr. C K Aanandan, Department of Electronics
25. Prof. Sunil K Narayanankutty, Department of Polymer Science & Rubber Technology
26. Dr. C G Nandakumar, Department of Ship Technology
27. Prof. P Radhakrishnan, International School of Photonics
27. Dr. G Madhu, School of Engineering
28. Dr. Sheenu Thomas, Centre of Excellence in Laser & Optical Sciences