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CENTRE FOR ACADEMIC COURSES
ANNA UNIVERSITY
CHENNAI – 600 025

Dr. R. RAJU
DIRECTOR

Letter No.3075A/AU/CAC/SSC/2018

ANNA UNIVERSITY DEAN OFFICE – 8 NOV 2018 No: MIT CAMPUS, CHENNAI-600 044

07.11.2018

To
All Heads (Engineering Departments),
University Departments,
Anna University,
Chennai – 600 025.

Sir / Madam,

Sub: Preparation of the Curriculum and Syllabus - Syllabus Sub Committee Meetings – University Departments – Regulations 2019 – reg.

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The Curriculum for UG I and II semesters (R- 2019) have been proposed in the HoD's Meeting held for Science and Humanities by the Chairperson, Science and Humanities. The Head of the Department is requested to exercise the option wherever required and finalize the Curriculum for I and II semesters for their respective Departments. And also requested to frame the tentative Curriculum and Syllabus for semesters III – VIII for all UG and for semesters I – IV for all PG programmes on or before 15.12.2018. The Head of the Departments are also requested to inform the requirements of BSC, ESC and HSMC Courses included in the curriculum (III – VIII) to the respective Head of the Departments for approving in their respective Syllabus Sub Committee. In the meantime, the lists of Syllabus Sub Committee members approved by the Vice Chancellor for all UG and PG programmes will be provided.

The Guidelines for preparation of Curricula and Syllabi for UG / PG programmes under Regulations 2019 is enclosed herewith.

The Final copy of Curricula and Syllabi approved by Syllabus Sub Committee may be sent to the office of the Centre for Academic Courses by 31.12.2018 through the respective Chairperson of the Faculty.

Thanking You,

Yours faithfully,

7/11/18

DIRECTOR

Encl: Guidelines.

Copy to:

1. The Chairperson, Faculty of Civil / Mech / I&C /EEE Tech / MBA.
   Anna University, Chennai - 25
2. The CAC. & The Stock File.

GUIDELINES FOR PREPARATION OF CURRICULA AND SYLLABI FOR UG/PG PROGRAMMES UNDER R-2019 (CBCS) IN UNIVERSITY DEPARTMENTS, ANNA UNIVERSITY

In the forthcoming syllabus sub-committee meetings with regard to framing the curricula and syllabi under Regulations 2019 (CBCS), we request you to kindly ensure the following points while preparing the revised curriculum for UG/PG Programmes under Regulation – 2019 (CBCS).

Common points for both UG and PG Programmes

1. No prerequisite is to be specified for any of the courses
2. General Structure of curriculum for each semester: 6 theory + 2 Lab or 5 theory + 3 Lab
3. The credit pattern of the course is indicated as L:T:P:C format. The L:T:P:C combination for UG / PG programmes can be either of the following:

3:0:0:3	4:0:0:4	0:0:2:1	0:0:4:2	3:1:0:4	1:1:0:2
2:0:0:2	2:1:0:3	2:0:2:3	2:2:0:4	3:0:2:4	1:0:2:2
3:0:0:0	2:0:0:0	0:0:6:3	0:0:12:6	0:0:16:8	0:0:24:12

CREDIT ASSIGNMENT

Contact period per week	CREDITS
1 Lecture Period / 1 Tutorial Periods	1
2 Laboratory Periods (also for EEC courses like / Seminar / Project Work / Case study / etc.)	1

Number of credits per semester shall not be more than 25 credits (including Semester 1 & Semester 2)

Points pertaining to UG programmes

1. **Category / Type of courses**

   i. **Humanities and Social Sciences including Management Courses (HSMC)** include Technical English, Employability Skills, Engineering Ethics and Human Values, Communication skills and Management Courses.

   ii. **Basic Science Courses (BSC)** include Mathematics, Physics, Chemistry, Biology, etc.

   iii. **Engineering Science Courses (ESC)** include Engineering practices, Engineering Graphics, Basics of Electrical / Electronics / Mechanical / Computer Engineering, Instrumentation etc.

   iv. **Professional Core Courses (PCC)** include the core courses relevant to the chosen specialization/branch.

   v. **Professional Elective Courses (PEC)** include the elective courses relevant to the chosen specialization/ branch.

vi. **Open Elective Courses (OEC)** shall provide opportunity to study a course from any discipline that includes the courses relevant to chosen specialization, the courses that enhances soft and managerial skills courses a student can choose from the curriculum of other B.E. / B. Tech. / B. Arch. programmes and courses offered by the Departments under the Faculty of Science and Humanities.

vii. **Mandatory Courses (MC)** enable to know something about the exposes to Environment Sciences, Indian Constitution, Essence of Indian Traditional Knowledge and Induction Programme, whose scores will have no bearing on their final credits.

viii. **Employability Enhancement Courses (EEC)** include Project Work and/or Internship, Career Development Skills, Creative and Innovative Project, Seminar, Professional Practices, Case Study and Industrial/Practical Training.

2. **Curriculum Design –Steps**

Step 1
- Grouping of courses into **HSMC, BSC, ESC, PCC, PEC, OEC, MC & EEC.**

Step 2
- Curriculum Design.

Step 3
- Calculation of Number & Percentage of Credits & comparison to AICTE norms – modify if necessary.

Step 4
- Summary - Given in Annexure I.

3. Regarding the Credit Distribution & minimum credits to complete a program, the number of credits for award of degree may vary among the programmes and may be between **160 - 165** for UG Programmes .
4. The minimum number of credits to complete the programme will be as given in the curriculum of the respective programme.
5. The minimum and maximum duration of the UG programmes is to be 4 years and 7 years respectively.
6. The Syllabi for the courses must be up to date and may consist of fundamental concepts, design aspects, problems, case studies, applications, state of art topics as applicable.
7. Standard Operating Procedure for Project Phase 1 / Phase 2 should be specified in the detailed Syllabus.
8. The Syllabi for the higher semesters Mathematics and English courses shall be prepared in consultation with the respective departments.
9. The books prescribed for each course should be of International / National standard.

10. Typical Curriculum Structure for *UG Degree Programmes*

S. No.	Category	Suggested Breakup of Credits(Total)
1	Humanities and Social Sciences including Management Courses (HSMC)	17*
2	Basic Science Courses (BSC)	20-23*
3	Engineering Science Courses including workshop, drawing, basics of electrical/mechanical/computer etc (ESC)	21*
4	Professional Core Courses (PCC) Including Lab Courses	62-64*
5	Professional Elective Courses relevant to chosen specialization/branch (PEC) which may include lab courses.	21*
6	Open subjects – Electives from other technical and /or emerging subjects (OEC)	6*
7	Project work, seminar and internship in industry or elsewhere	13*
8	Mandatory Courses (MC) [Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Knowledge Tradition]	(non-credit)
	Total	160-165*

**Minor variation is allowed as per need of the respective disciplines.*

HUMANITIES AND SOCIAL SCIENCES INCLUDING MANAGEMENT COURSES (HSMC)

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lecture	Tutorial	Practical		
1.	HSMC	Technical English I	4	0	0	4	1
2.	HSMC	Technical English II	4	0	0	4	2
3.	HSMC	Humanities – 1	3	0	0	3	3
4.	HSMC	Management	3	0	0	3	4
5.	HSMC	Humanities – II	3	0	0	3	5
					Total Credits:	17	

BASIC SCIENCE COURSE [BSC]

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practical		
1.	BSC	Mathematics I	3	1	0	4	1
2.	BSC	Engineering Physics	3	0	0	3	1
3.	BSC	Engineering Chemistry	3	0	0	3	1
4.	BSC	Basic Sciences Laboratory	0	0	4	2	1
5.	BSC	Mathematics II	3	1	0	4	2
6.	BSC	Physics (OR) Materials Science (OR) Chemistry (Branch Specific)	3	0	0	3	2
7.	BSC	Mathematics III	3	1	0	4	3
					Total Credits:	20 - 23	

ENGINEERING SCIENCE COURSE [ESC]

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lecture	Tutorial	Practical		
1.	ESC	Engineering Graphics	1	0	4	3	1/2
2.	ESC	Workshop Practices Lab	0	0	4	2	1/2
3.	ESC	Programming for Problem Solving	3	0	0	3	2
4.	ESC	Basics of Electrical and Electronics Engineering (OR) Basics of Civil and Mechanical Engineering	3	0	0	3	2
5.	ESC	Engineering Mechanics	3	0	0	3	1/2
6.	ESC	Electrical and Electronics Engineering Laboratory	0	0	4	2	2
7.	ESC	Computer Practices Laboratory	0	0	4	2	1/2
8.	ESC	Thermodynamics & fluid mechanics	3	0	0	3	3
					Total Credits:	21	

PROFESSIONAL CORE COURSES [PCC]

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lecture	Tutorial	Practica		
1	PCC						
2	PCC						
3	PCC						
4	PCC						
5	PCC						
6	PCC						
7	PCC						
8	PCC						
9	PCC						
10	PCC						
11	PCC						
12	PCC						
13	PCC						
14	PCC						
15	PCC						
16	PCC						
					Total Credits	62-64	

PROFESSIONAL ELECTIVE [PEC]

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practical		
1.	PEC	Professional Elective – I					
2.	PEC	Professional Elective – II					
3.	PEC	Professional Elective – III					
4.	PEC	Professional Elective – VI					
5.	PEC	Professional Elective – V					
6.	PEC	Professional Elective – VI					
7.	PEC	Professional Elective – VII					
					Total Credits	21	

OPEN ELECTIVE COURSES [OEC]

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practical		
1	OEC	Open Elective – I	3	0	0	3	6
2	OEC	Open-Elective – II	3	0	0	3	7
					Total Credits:	6	

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practical		
1	EEC	Summer Internship / Summer Project (Minimum 4 Weeks)	0	0	0	2	5
2	EEC	Project 1/Phase I	0	0	6	3	7
3	EEC	Project 2/ Phase II	0	0	16	8	8
					Total Credits:	13	

MANDATORY COURSES (MC)

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practical		
1.	MC	Environmental Sciences	3	0	0	0	4/6
2.	MC	Indian Constitution, Essence of Indian Knowledge Tradition	3	0	0	0	5
					Total Credits:	0	

11. Minimum Ten Elective slots should be given in the curriculum, out of which two are for Open Electives.

Open Elective (OE) courses include the courses relevant and allied to the chosen specialization / branch which a student can choose from the Open Elective list specified in the curriculum of the respective B.E. / B. Tech. / B. Arch. Programmes. These courses are normally offered by departments to which the students do not belong.

12. For UG courses, in the Syllabus, Textbooks (1 to 3) may be prescribed under "Text Books" and reference books may also be prescribed.

13. The Curriculum and Syllabi will contain the following components (Annexure I)

Points pertaining to PG programmes

1. Category / Type of courses

i. **Program Core Courses (PCC)** include the core courses relevant to the chosen specialization/branch.

ii. **Program Elective Courses (PEC)** include the elective courses relevant to the chosen specialization/ branch.

iii. **Research Methodology and IPR Courses (RMC)** to understand importance and process of creation of patents through research.

iv. **Open Elective Courses (OEC)** the courses included under open electives are of importance in the context of Special Skill Development and they are on Business Analytics, Industrial Safety, Operation Research and Cost Management of Engineering Project.

v. **Audit Courses (AC)** covering the subjects of developing desired attitude among the learners is on the line of initiatives such as Unnat Bharath Abhiyan, Yoha, Value education, Disaster Management, Sanskrit, Pedagogy, Constitution of India, Personality development through Indian Culture, etc.

vi. **Employability Enhancement Courses (EEC)** includes Project Work and/or Internship, Seminar, Professional Practices, Case Study and Industrial / Practical Training.

PROGRAM CORE COURSES (PCC)

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practica		
1.	PCC	Program Core Courses I					1
2.	PCC	Program Core Courses II					1
3.	PCC	Program Core Courses III					1
4.	PCC	Program Core Courses IV					2
5.	PCC	Program Core Courses V					2
					Total Credits	15	

PROFESSIONAL ELECTIVE [PEC]

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practica		
1.	PEC	Program Elective -I					1
2.	PEC	Program Elective -II					2
3.	PEC	Program Elective -III					2
4.	PEC	Program Elective -IV					3
5.	PEC	Program Elective -V					3
					Total Credits	15	

RESEARCH METHODOLOGY AND IPR COURSES (RMC)

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practica		
1	RMC	Research Methodology and IPR	2	0	0	2	1
					Total Credits:	2	

OPEN ELECTIVE COURSES [OEC]

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practical		
1	OEC	**Open Elective*** 1. Business Analytics 2. Industrial Safety 3. Operations Research 4. Cost Management of Engineering Projects 5. Composite Materials 6. Waste to Energy * (Out of 6 Courses one Course must be selected)	3	0	0	3	3
					Total Credits:	3	

AUDIT COURSES (AC)

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practical		
1	AC	Audit Courses I	2	0	0	0	1
2	AC	Audit Courses II	2	0	0	0	2
					Total Credits:	**0**	

Audit Courses: (Out of 8 Courses we must select two Courses)

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills.

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

Sl. No	Code No.	Course Title	Periods per week			Credits	Semester
			Lectur	Tutorial	Practical		
1	EEC	Dissertation-1 / Industrial Project Phase I	0	0	12	6	3
2	EEC	Dissertation-2/ Industrial Project Phase II	0	0	24	12	4
					Total Credits:	18	

2. Regarding the Credit Distribution & minimum credits to complete a program, the number of credits for award of degree may vary.

PROGRAMME	PRESCRIBED CREDIT
M.E. / M.Tech.	70 - 75
M.C.A.	113 - 120
M.B.A.	86 - 90
M.Sc. (2 Years)	75 – 85

3. The minimum number of credits to complete the programme will be as given in the curriculum of the respective programme.
4. The minimum and maximum duration of the PG programmes is 2 years and 4 years respectively.
5. For PG courses, in the Syllabus only reference books may be prescribed.
6. For every programme elective, three program electives may be offered. Students may choose one among these three program electives.
7. Open elective courses are department specific and offered to the respective department students.
8. The Curriculum and Syllabi will contain the following components (Annexure II).

ANNEXURE I

UG Degree Programmes

Each of the programmes spell out Programme Educational Objectives (5 PEOs), Programme Outcomes (12 POs) with mapping and Program Specific Outcomes (minimum 2 PSOs)*

* The sample of the Program Specific Outcomes for the Computer Science and Engineering Department is provided as below.

1. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) :

I. Find gainful employment in manufacturing and service sector.
II. Get elevated to managerial position and lead the organization competitively.
III. Enter into higher studies leading to post-graduate and research degrees.
IV. Become consultant and provide solutions to the practical problems of any organization.
V. Become an entrepreneur and be part of a supply chain or make and sell products in the open market.

2. PROGRAMME OUTCOMES (POs):

After going through the four years of study, our Industrial Engineering Graduates will exhibit ability to:

PO #	Graduate Attribute	Programme Outcome
1	Engineering knowledge	Apply knowledge of mathematics, basic science and engineering science.
2	Problem analysis	Identify, formulate and solve engineering problems.
3	Design/development of solutions	Design a system or process to improve its performance, satisfying its constraints.
4	Conduct investigations of complex problems	Conduct experiments & collect, analyze and interpret the data.
5	Modern tool usage	Apply various tools and techniques to improve the efficiency of the system.
6	The Engineer and society	Conduct themselves to uphold the professional and social obligations.
7	Environment and sustainability	Design the system with environment consciousness and sustainable development.
8	Ethics	Interact in industry, business and society in a professional and ethical manner.
9	Individual and team work	Function in a multidisciplinary team.
10	Communication	Proficiency in oral and written Communication.
11	Project management and finance	Implement cost effective and improved system.
12	Life-long learning	Continue professional development and learning as a life-long activity.

3. PROGRAM SPECIFIC OUTCOMES (PSOs):

By the completion of Computer Science program the student will have following Program specific outcomes.

1. Foundation of Computer System: Ability to understand the principles and working of computer systems. Students can assess the hardware and software aspects of computer systems.

2. Foundations of Software development: Ability to understand the structure and development methodologies of software systems. Possess professional skills and knowledge of software design process. Familiarity and practical competence with a broad range of programming language and open source platforms.

3. Foundation of mathematical concepts: Ability to apply mathematical methodologies to solve computation task, model real world problem using appropriate data structure and suitable algorithm.

4. Applications of Computing and Research Ability: Ability to use knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations

4. PEO / PO Mapping:

PROGRAMME EDUCATIONAL OBJECTIVES	PROGRAMME OUTCOMES											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
I	✓	✓	✓					✓				
II								✓		✓	✓	
III			✓	✓	✓		✓	✓				
IV				✓	✓					✓	✓	✓
V			✓						✓	✓	✓	✓

Mapping of Course Outcome and Programme Outcome

		Course Name	PO01	PO02	PO03	PO04	PO05	PO06	PO07	PO08	PO09	PO10	PO11	PO12
YEAR 1	Semester 1													
	Semester 2													
YEAR 2	Semester 3													
	Semester 4													

		Course Name	PO01	PO02	PO03	PO04	PO05	PO06	PO07	PO08	PO09	PO10	PO11	PO12
YEAR 3	Semester 5													
	Semester 6													
YEAR 4	Semester 7													
	Semester 8													

CURRICULUM AND SYLLABUS

Induction Program (Please refer AICTE Model Curriculum **Appendix-A** for guidelines. Details of Induction program also available in the curriculum of Mandatory courses.)

Induction program (mandatory)	**3 weeks duration** (Please refer Appendix-A for guidelines & also details available in the curriculum of Mandatory courses)
Induction program for students to be offered right at the start of the first year.	• Physical activity • Creative Arts • Universal Human Values • Literary • Proficiency Modules • Lectures by Eminent People • Visits to local Areas • Familiarization to Dept./Branch & Innovations

SEMESTER I

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Technical English I	HSMC	4	0	0	4	4
2.		Mathematics I	BSC	3	1	0	4	4
3.		Engineering Physics	BSC	3	0	0	3	3
4.		Engineering Chemistry	BSC	3	0	0	3	3
5.		Engineering Graphics (OR) Engineering Mechanics	ESC	1/3	0/1	4/0	5/4	3/4
PRACTICALS								
6.		Basic Sciences Laboratory	BSC	0	0	4	4	2
7.		Workshop Practices Laboratory (OR) Computer Practices Laboratory	ESC	0	0	4	4	2
			TOTAL				27/26	21/22

SEMESTER II

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Technical English II	HSMC	4	0	0	4	4
2.		Mathematics II	BSC	3	1	0	4	4
3.		Programming for Problem Solving	ESC	3	0	0	3	3
4.		Basics of Electrical and Electronics Engineering (OR) Basics of Civil and Mechanical Engineering	ESC	3	0	0	3	3
5.		Engineering Graphics (OR) Engineering Mechanics	ESC	1/3	0/1	4/0	5/4	3/4
6.		Physics (OR) Materials Science (OR) Chemistry (Branch Specific)	BSC	3	0	0	3	3
PRACTICALS								
7.		Workshop Practices Laboratory / Computer Practices Laboratory	ESC	0	0	4	4	2
8.		Electrical and Electronics Engineering Laboratory	ESC	0	0	4	4	2
			TOTAL				30/29	24/25

SEMESTER III

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Mathematics III	BSC	3	1	0	4	4
2.		Engineering Science Course	ESC					
3.		Professional Core	PCC					
4.		Professional Core	PCC					
5.		Humanities – 1	HSMC					
PRACTICALS								
6.		Lab						
7.		Lab						
			TOTAL					

SEMESTER IV

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Management	HSMC	3	0	0	3	3
2.		Environmental Sciences*	MC	3	0	0	3	3
3.		Professional Core Courses	PCC					
4.		Professional Core Courses	PCC					
5.		Professional Core Courses	PCC					
6.		Professional Core Courses	PCC					
PRACTICALS								
7.		Lab						
8.		Lab						
			TOTAL					

*This Subject can also be offered in VI semester.

SEMESTER V

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Humanities – II	HSMC	3	0	0	3	3
2.		Indian Constitution, Essence of Indian Knowledge Tradition	MC	3	0	0	3	3
3.		Professional Core Courses	PCC					
4.		Professional Core Courses	PCC					
5.		Professional Core Courses	PCC					
6.		Professional Elective	PEC					
PRACTICALS								
7.		Lab						
8.		Lab						
9.		Summer Internship / Summer Project (Minimum 4 Weeks)		0	0	0		2
			TOTAL					

SEMESTER VI

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Professional Core Courses	PCC					
2.		Professional Core Courses	PCC					
3.		Professional Core Courses	PCC					
4.		Professional Elective	PEC					
5.		Professional Elective	PEC					
6.		Open Elective	OEC	3	0	0		3
PRACTICALS								
7.		Lab						
8.		Lab						
			TOTAL					

SEMESTER VII

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Professional Core Courses	PCC					
2.		Professional Core Courses	PCC					
3.		Professional Core Courses	PCC					
4.		Professional Elective	PEC					
5.		Professional Elective	PEC					
6.		Open Elective	OEC	3	0	0		3
PRACTICALS								
7.		Lab						
8.		Project 1/Phase I	EEC	0	0	6		3
			TOTAL					

SEMESTER VIII

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Professional Elective	PEC					
2.		Professional Elective	PEC					
3.								
PRACTICALS								
4.		Project 2/ Phase II	EEC	0	0	16		8
			TOTAL					

5. **Summary**

Name of the Programme										
	Subject Area	Credits per Semester								Credits Total
	Non-Credit /(Mandatory)									

ANNEXURE II

PG Degree Programmes

Each of the programmes spell out Programme Educational Objectives (5 PEOs), Programme Outcomes (12 POs) with mapping and Program Specific Outcomes (minimum 2 PSOs)*

* The sample of the Program Specific Outcomes for the Computer Science and Engineering Department is provided as below.

1. **PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) :**

I. Find gainful employment in manufacturing and service sector.
II. Get elevated to managerial position and lead the organization competitively.
III. Enter into higher studies leading to post-graduate and research degrees.
IV. Become consultant and provide solutions to the practical problems of any organization.
V. Become an entrepreneur and be part of a supply chain or make and sell products in the open market.

2. **PROGRAMME OUTCOMES (POs):**

After going through the four years of study, our Industrial Engineering Graduates will exhibit ability to:

PO #	Graduate Attribute	Programme Outcome
1	Engineering knowledge	Apply knowledge of mathematics, basic science and engineering science.
2	Problem analysis	Identify, formulate and solve engineering problems.
3	Design/development of solutions	Design a system or process to improve its performance, satisfying its constraints.
4	Conduct investigations of complex problems	Conduct experiments & collect, analyze and interpret the data.
5	Modern tool usage	Apply various tools and techniques to improve the efficiency of the system.
6	The Engineer and society	Conduct themselves to uphold the professional and social obligations.
7	Environment and sustainability	Design the system with environment consciousness and sustainable development.
8	Ethics	Interact in industry, business and society in a professional and ethical manner.
9	Individual and team work	Function in a multidisciplinary team.
10	Communication	Proficiency in oral and written Communication.
11	Project management and finance	Implement cost effective and improved system.
12	Life-long learning	Continue professional development and learning as a life-long activity.

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1. Foundation of Computer System: Ability to understand the principles and working of computer systems. Students can assess the hardware and software aspects of computer systems.

2. Foundations of Software development: Ability to understand the structure and development methodologies of software systems. Possess professional skills and knowledge of software design process. Familiarity and practical competence with a broad range of programming language and open source platforms.

3. Foundation of mathematical concepts: Ability to apply mathematical methodologies to solve computation task, model real world problem using appropriate data structure and suitable algorithm.

4. Applications of Computing and Research Ability: Ability to use knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations

4. PEO / PO Mapping:

PROGRAMME EDUCATIONAL OBJECTIVES	PROGRAMME OUTCOMES											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
I	✓	✓	✓					✓				
II								✓		✓	✓	
III			✓	✓	✓		✓	✓				
IV				✓	✓					✓	✓	✓
V			✓						✓	✓	✓	✓

Mapping of Course Outcome and Programme Outcome

		Course Name	PO01	PO02	PO03	PO04	PO05	PO06	PO07	PO08	PO09	PO10	PO11	PO12
YEAR 1	Semester 1													
	Semester 2													
YEAR 2	Semester 3													
	Semester 4													

CURRICULUM AND SYLLABUS

SEMESTER I

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Program Core I						
2.		Program Core II						
3.		Program Core III						
4.		Program Elective I (one from list of electives I)		3	0	0		3
5.		Research Methodology and IPR		2	0	0		2
6.		Audit Course – I (one from list of Audit courses)		2	0	0		0
7.								
PRACTICALS								
8.		Laboratory I(Based on cores)						
9.		Laboratory II (Based on Electives)						
			TOTAL					

SEMESTER II

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Program Core IV						
2.		Program Core V						
3.		Program Elective II (one from list of electives III)		3	0	0		3
4.		Program Elective III (one from list of electives IV)		3	0	0		3
5.		Audit Course –II (one from list of Audit courses)		2	0	0		0
6.								
PRACTICALS								
7.		Laboratory III(Based on cores)						
8.		Laboratory IV(Based on Electives)						
9.		Mini Project with Seminar		2	0	0		2
			TOTAL					

SEMESTER III

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Program Elective IV (one from list of electives V)		3	0	0		3
2.		Program Elective V (one from list of electives V)		3	0	0		3
3.		Open Elective (one from list of 6 courses)		3	0	0		3
4.								
PRACTICALS								
5.		Dissertation-1 / Industrial Project Phase I		0	0	12		6
			TOTAL					15

SEMESTER IV

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1.		Dissertation-2/ Industrial Project Phase II		0	0	24		12
			TOTAL					12

Audit course 1 & 2:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills.

Open Elective:

1. Business Analytics
2. Industrial Safety
3. Operations Research
4. Cost Management of Engineering Projects
5. Composite Materials
6. Waste to Energy

Off: 22357077 / 76
Fax / Dir.: 22352272

CENTRE FOR ACADEMIC COURSES
ANNA UNIVERSITY
CHENNAI – 600 025

CURRICULUM
R 2019
GUIDELINES

Dr. R. RAJU
DIRECTOR
Letter No. 3075B/AU/CAC/SSC/2018

15.11.

To
All Heads,
University Departments,
Anna University,
Chennai – 600 025.

Sir / Madam,

Sub: **Preparation of Curriculum – Regulations 2019 – University Departments – Reg.**

******

In principle it was decided in the Chairpersons meeting to implement AICTE Model Curriculum for both UG/PG programmes in the forth coming Regulations – 2019 (CBCS) revision. In case, if any difficulty is experienced while designing the curriculum as per the guidelines sent from Centre for Academic Courses, the HoD's are requested to get in touch with their respective Chairperson for any clarifications and request to finalize the design of Curriculum on or before 19.11.2018 and the same may be sent to this office for further action please.

Thanking You,

Yours faithfully,

15/11/18

DIRECTOR

Copy to:

1. The Chairperson, Faculty of Civil / Mech / EEE / I & C Tech / MBA / SAP / S&H.
   Anna University, Chennai - 25.
2. The Stock File.

MINUTE

DEPARTMENT OF INSTRUMENATION ENGINEERING
MADRAS INSTITUTE OF TECHNOLOGY
ANNA UNIVERSITY :: CHROMEPET

Minutes of the First Curriculum and Syllabus Revision Meeting (C&S R-2019) for UG & PG, held on 12.11.2018 at 1.00 PM in the KVN Seminar Hall, Dept. of IE.

Members Present:

S.No	Name	Designation
1	Dr. J. Prakash	Professor & Head
3	Dr. N. Pappa	Associate Professor
5	Dr. S. Srinivasan	Associate Professor
4	Dr. K. Latha	Associate Professor
6	Dr. S. Kumar	Associate Professor
2	Dr. D. Vasanthi	Associate Professor
7	Dr. Sabitha Ramakrishnan	Assistant Professor
8	Dr. S. Sutha	Assistant Professor
9	Dr. C. Shanthi	Assistant Professor
10.	Dr. K. Kamalanand	Assistant Professor
11	Dr. D. Kalpana	Assistant Professor
12.	Dr. S. Meyyappan	Assistant Professor
13	Dr. M. Vijayakarthick	Assistant Professor
14	Dr. A. Ganesh Ram	Assistant Professor

Minutes:

Dr. J. Prakash presented the guidelines issued by the Director, Academic Courses vide Lr.No.3075A/AU/CAC/SSC/2018 dated 7.11.2018. He informed that **Prof. P.Kanagasabapathy**, Professor (Retd.), Dept. of IE, will act as Advisor for the revision of curriculum & syllabus for R-2019 (UG & PG). He proposed the list of coordinators, co-coordinators and members for the various sub-committees in this regard.as follows:

Coordinators & Co-coordinators of Syllabus Sub-committee (R-2019):

Programme	Co-ordinator	Co-coordinators
PG	Dr.N.Pappa	Dr.S.Sutha Dr.C.Shanthi
UG	Dr.D.Vasanthi	Dr.S.Srinivasan Dr.Sabitha Ramakrishnan, Dr.M.Vijaykarthick

Members:

Specilization	External Members	Co-ordinator	Faculty members	Student Me
Control and Automation	i.Dr.P.Lakshmi, Professor, EEE, CEG ii.Mr. Jayaharan–Ramco Systems Chennai	Dr.N.Pappa	Dr.J.Prakash, Dr.D.Vasanthi, Dr.M.Mythily, Mr.P.Thangaganapathy	PG:Anjaly.S.(UG:Mr.Vishnuv an
Electrical and Electronics	i.Dr.B.Uma Maheswari, Professor, EEE, CEG ii.Mr.Pugazhendi, TNEB	Dr.K.Latha	Dr.T.Thyagarajan, Dr.S.Sutha, Dr.S.Meyappan, Dr.Vijaykarthick, Ms.M.Kayalvizhi, Mr.R.Sridhar	PG: Ms.Mynasabgari zareena UG:Mr.Ashwin
Computers and Communication	i.Dr.Jayashree, Professor, CS,MIT ii.Mr.Vijayarajeshwaran VI micro systems iii.Mr.Parameshwaran	Dr.Sabitha Ramakrishnan	Dr.V.Natarajan, Dr.C.Shanthi, Dr.A.Ganesh Ram, Ms.S.Arockia Suganya,	PG:Kiruthika.U UG: Ms.Harshine Varuna
Measurement and Instrumentation	i.Dr.Boby George, IITM ii.Mr.Vijayaragavan, Consultant iii.Mr. Vimalesh M/s Dow Chemicals	Dr.S.Srinivasan	Dr.S.Kumar, Dr.K.Kamalanand, Dr.D.Kalpana, Dr.N.Vinoth, Mr.V.Govindan Mr.K.Selvakumar	PG: Swetha.B UG:Subathra
Allied Courses	-	Dr. K.Kamalanand	Faculty members from other departments (to be decided)	-

The following is the list of professional Assistants assigned under various domain:

Specilization	Professional Assistant
Control and Automation	Ms.Amulu
Electrical and Electronics	Ms.Chitra
Computers and Communication	Mr.Lakshmanan
Measurement and Instrumentation	Mr.Jagadeesh

He requested the coordinators and co-coordinators to prepare the curriculum and syllabi as per the guidelines, highlighting the following points:

1. Milestones for curriculum revision:

Sl.No.	Activity	Date	Faculty in charge
1	Finalizing the list of courses	15.11.2018	Sub-committee Coordinators
2	Identification of Professional / Open Electives	19.11.2018	Sub-committee Coordinators

3	Identification of stakeholders: Industry Expert Academic Expert Alumni UG students PG students	20.11.2018	HOD
4	Conduct of Second C&S R-2019 meeting	23.11.2018	HOD
5	Fine-tuning of Core courses, Professional Electives and Open Electives list	24.11.2018	HOD
6	Preparation of first draft of syllabus	3.12.2018	All faculty members
7	Conduct of Third C&S R-2019 meeting	10.12.2018	HOD
8	Submission of syllabus to HOD	13.12.2018	Sub-committee coordinators
9	Submission of Final draft to Director, CAC	15.12.2018	

2. He requested the Co-ordinators of subcommittee to identify the core and elective subjects of other Departments in MIT, CEG and AC Tech that are relevant to Instrumentation. He suggested that those courses can be included under the professional electives of Instrumentation Engineering to provide wide opportunity for the students of IE.

3. During the Second C&S R-2019 meeting, the sub-committee coordinators should present the list of courses proposed under their domain.

4. Regarding the preparation of syllabus, the splitup of courses taken up by the student is as follows:

Sl.No.	Programme	Core	Professional Elective	Open Elective
1	UG	16	7	2
2	PG	5	5	1

5. The following UG courses may be converted into practical oriented courses with 1 hour theory + 3 hours practical:
   (i) Microprocessors & Microcontrollers
   (ii) Programming and Data Structures
   (iii) Numerical Methods
   (iv) Control System

6. While preparing the syllabus for the individual courses, the faculty members should take care of the following:
   (i) Course Objectives can be framed unit-wise (5 objectives).
   (ii) Minimum of 6 Course Outcomes (CO) should be framed.
   (iii) Course Outcomes (COs) should be mapped to 12 POs.
   (iv) References for the courses should be standard Text Books and latest edition.
   (v) Highlight the changes w.r.to the earlier regulations R-2015.

7. In order to facilitate the UG students to take up the competitive Exams at the end of the UG programme, the faculty members should ensure that the topics covered in the individual courses should include the GATE-Instrumentation syllabus.

8. The revised UG curriculum can contain basic courses till 6th Sem of UG and new courses be introduced in 7th and 8th Semester.

9. The soft copies of the following documents will be shared with all the faculty members facilitate the preparation of C&S R-2019:
   (i) Guidelines issued by Director, CAC
   (ii) Annexure I of guidelines
   (iii) Annexure II of guidelines
   (iv) Curriculum and Syllabi of R-2015

Dr.D.Vasanthi
UG Coordinator
C&S R-2019

12/11/2018
Dr.N.Pappa
PG Coordinator
C&S R-2019

Dr. J.Prakash
Prof. & Head, IE

Annex - I.

DEPARTMENT OF INSTRUMENTATION ENGINEERING
MIT CAMPUS:: CHENNAI 600 044.

ATTENDANCE SHEET

SYLLABUS COMMITTEE MEETING

Sl. No.	Name of the Faculty	03.12.2018		04.12.2018		05.12.2018		06.12.2018		07.12.2018		Signature
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	
1												
2												
3	Dr. N. PAPPA	✓	✓	✓	–	✓	✓	✓	–	–	✓	
4	M. VIJAYAKARTHICK	✓	✓	✓	✓	✓	✓				✓	
5	V. Govindan										✓	
6	K. Selva kumar										✓	
7	A. GANESH RAM	✓	✓	✓	•	✓		✓			✓	
8	S. MEYAPPAN	✓	✓	✓	✓	✓	✓				✓	
9	K. LATHA					✓	✓	✓			✓	
10.	D. Manamalli	✓									✓	
11.	D. Kalpana	✓	✓	✓	–	✓	✓	✓	–	–	✓	
12	N. VINOTH	✓	✓	✓	–	✓	✓	✓	–	–	✓	
13	S. Srinivasan	✓	✓					✓	✓	✓	✓	
14.	Dr. D. Vasanthi	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	

DEPARTMENT OF INSTRUMENTATION ENGINEERING
MIT CAMPUS:: CHENNAI 600 044.

ATTENDANCE SHEET

SYLLABUS COMMITTEE MEETING

Sl. No.	Name of the Faculty	03.12.2018		04.12.2018		05.12.2018		06.12.2018		07.12.2018		Signature
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	
15	M. Mythily	✓	✓	✓	–	✓	✓	✓	–	-	✓	
16.	S. Arockia Sukanya	✓	✓	✓	–	✓	✓	✓	–	–	✓	
17.	M. Kayalvizhi	✓	✓	–	–	✓	✓	✓	–	–	✓	
18	C Shanthi	✓	✓	–	–	✓	✓	✓				

DEPARTMENT OF INSTRUMENTATION ENGINEERING
MIT CAMPUS, CHENNAI 600 044.

SUB COMMITTEE – CONTROL AUTOMATION

ATTENDANCE SHEET

DATE: 22.11.2018 TIME: 02.00 P.M.

Sl.No.	NAME	SIGNATURE
1.	Dr. N. PAPPA	
2.	Dr. D. VASANTHI	
3.	Dr. M. Mythily	
4	Mr. P. Thangaganapathy	
5.	P. Kanagasabapathy	

MINU

DEPARTMENT OF INSTRUMENATION ENGINE
MADRAS INSTITUTE OF TECHNOLOGY
ANNA UNIVERSITY :: CHROMEPET

Minutes of the Second Curriculum and Syllabus Revision Meeting (C&S R-2019) for UG & PG, held on 03.12.2018 at 10.30 AM in the KVN Seminar Hall, Dept. of IE.

Members Present:

s.no	Name	Designation
1.	Dr. J. Prakash	Professor & Head
2.	Dr.P.Kanagasabapathy	Visiting Professor
3.	Dr. N. Pappa	Professor
4.	Dr.D.Manamalli	Professor
5.	Dr. S. Srinivasan	Professor
6.	Dr. S. Kumar	Associate Professor
7.	Dr. D. Vasanthi	Associate Professor
8.	Dr. Sabitha Ramakrishnan	Assistant Professor
9.	Dr. S. Sutha	Assistant Professor
10.	Dr. C. Shanthi	Assistant Professor
11.	Dr. D. Kalpana	Assistant Professor
12.	Dr. S. Meyyappan	Assistant Professor
13.	Dr. M. Vijayakarthick	Assistant Professor
14.	Dr. A. Ganesh Ram	Assistant Professor
15.	Dr.N.Vinoth	Assistant Professor
16.	Mr.K.Selva Kumar	Teaching Fellow
17.	Ms.M.Kayalvizhi	Teaching Fellow
18.	Mr.R.Sridhar	Teaching Fellow
19.	Ms.S.Arockiya Suganya	Teaching Fellow

Minutes:

- Dr. J.Prakash presented the outline of the curriculum of UG and PG issued by the Director, Academic Courses vide Lr.No.3075A/AU/CAC/SSC/2018 dated 7.11.2018.

- He requested the faculty members to give their suggestions to update the Programme Educational Objectives, Programme Outcomes, Programme Specific Outcomes and Course Outcomes.

- He also informed that there should be atleast 5 numbers of Programme Educational Objectives, the Programme outcomes should be the expansion of graduate attributes and must be generic, 3 numbers of Programme specific Outcomes and minimum of 6 Course Outcomes relating to graduate attributes.

- Based on the suggestions obtained from all the faculty members the following curriculum for the UG and PG programmes were finalized:
  (i) UG Programme

SEMESTER I

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Technical English I	HSMC	4	0	0	4	4
2.		Mathematics I	BSC	3	1	0	4	4
3.		Engineering Physics	BSC	3	0	0	3	3
4.		Engineering Chemistry	BSC	3	0	0	3	3
5.		Engineering Graphics	ESC	1	0	4	5	3
PRACTICALS								
6.		Basic Sciences Laboratory	BSC	0	0	4	4	2
7.		Workshop Practices Laboratory	ESC	0	0	4	4	2
			TOTAL				**27**	**21**

SEMESTER II

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Technical English II	HSMC	4	0	0	4	4
2.		Mathematics II	BSC	3	1	0	4	4
3.		Programming for Problem Solving	ESC	3	0	0	3	3
4.		Basics of Electrical and Instrumentation Engineering	ESC	3	0	0	3	3
5.		Engineering Mechanics	ESC	3	1	0	4	4
6.		Materials Science	BSC	3	0	0	3	3
PRACTICALS								
7.		Computer Practices Laboratory	ESC	0	0	4	4	2
8.		Electrical and Instrumentation Laboratory	ESC	0	0	4	4	2

		TOTAL	19	2	8	29	25

SEMESTER III

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Mathematics III	BSC	3	1	0	4	4
2.		Analysis of Electric Circuits	PCC	3	0	0	3	3
3.		Thermodynamics and Fluid Mechanics	ESC	3	0	0	3	3
4.		Electronics for Analog Signal Processing- I	PCC	3	0	0	3	3
5.		Signals and Systems	PCC	3	0	0	3	3
6.		Humanities – 1	HSMC	3	0	0	3	3
PRACTICALS								
7.		Electronics for Analog Signal Processing Laboratory	PCC	0	0	4	4	2
8.		Circuit Simulation Laboratory	PCC	0	0	4	4	2
			TOTAL	**18**	**1**	**8**	**27**	**23**

SEMESTER IV

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Management	HSMC	3	0	0	3	3
2.		Environmental Sciences	MC	3	0	0	3	0
3.		Instrument Transducers	PCC	3	0	0	3	3
4.		Electronics for Analog Signal Processing- II	PCC	3	0	0	3	3
5.		Electrical and Electronic Measurements	PCC	3	0	0	3	3
6.		Digital System Design	PCC	3	0	0	3	3
PRACTICALS								
7.		Sensors and Signal Conditioning Laboratory	PCC	0	0	4	4	2
8.		Digital System Design Laboratory	PCC	0	0	4	4	2
			TOTAL	**18**	**0**	**8**	**26**	**19**

SEMESTER V

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Humanities – II	HSMC	3	0	0	3	3
2.		Indian Constitution, Essence of Indian Knowledge Tradition	MC	3	0	0	3	0
3.		Control System Design	PCC	3	0	0	3	3
4.		Industrial Instrumentation - I	PCC	3	0	0	3	3
5.		Embedded System Design	PCC	3	0	0	3	3
6.		Professional Elective - I	PEC	3	0	0	3	3
PRACTICALS								
7.		Control and Instrumentation Laboratory	PCC	0	0	4	4	2
8.		Embedded System Laboratory	PCC	0	0	4	4	2
9.		Summer Internship / Summer Project (Minimum 4 Weeks)	EEC	0	0	0	0	2
			TOTAL	**18**	**0**	**8**	**26**	**21**

SEMESTER VI

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Process Control	PCC	3	0	0	3	3
2.		Industrial Instrumentation - II	PCC	3	0	0	3	3
3.		Discrete Time Signal Processing	PCC	3	0	0	3	3
4.		Professional Elective - II	PEC	3	0	0	3	3
5.		Professional Elective - III	PEC	3	0	0	3	3
6.		Open Elective - I	OEC	3	0	0		3
PRACTICALS								
7.		Instrumentation System Design Laboratory	PCC	0	0	4	4	2
8.		Process Control Laboratory	PCC	0	0	4	4	2
			TOTAL	**18**	**0**	**8**	**23**	**22**

SEMESTER VII

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Industrial Automation Systems	PCC	3	0	0	3	3
2.		Process Data Analytics	PCC	3	0	0	3	3
3.		Industrial Data Communication	PCC	3	0	0	3	3
4.		Professional Elective - IV	PEC	3	0	0	3	3
5.		Professional Elective - V	PEC	3	0	0	3	3
6.		Open Elective - II	OEC	3	0	0		3
PRACTICALS								
7.		Industrial Automation Laboratory	PCC	0	0	4	4	2
8.		Project 1/Phase I	EEC	0	0	6		3
			TOTAL	**18**	**0**	**10**	**19**	**23**

SEMESTER VIII

. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Professional Elective- VI	PEC	3	0	0	3	3
2.		Professional Elective - VII	PEC	3	0	0	3	3
PRACTICALS								
3.		Project 2/ Phase II	EEC	0	0	16		8
			TOTAL	**6**		**16**	**6**	**14**

(ii) PG Programme:

SEMESTER I

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Transducers and Smart Instruments		3	0	0		3

2.		Advanced Instrumentation Systems		3	0	0		3
3.		Process Control: Design and Analysis		3	0	0		3
4.		Advanced Digital Signal Processing		3	0	2		4
5.		Program Elective I (one from list of electives I)		3	0	0		3
6.		Research Methodology and IPR		2	0	0		2
7.		Audit Course – I (one from list of Audit courses)		2	0	0		0
PRACTICALS								
8.		Process Control and Instrumentation Laboratory		0	0	4		2
9.		Modeling and Simulation Laboratory		0	0	4		2
			TOTAL					22

SEMESTER II

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Advanced Process Control		3	0	0		3
2.		Instrumentation System Design		3	0	2		4
3.		Program Elective II (one from list of electives III)		3	0	0		3
4.		Program Elective III (one from list of electives IV)		3	0	0		3
5.		Audit Course –II (one from list of Audit courses)		2	0	0		0
6.		Machine Learning and Data Analytics		3	0	0		3
PRACTICALS								
7.		Industrial Automation Laboratory		0	0	4		2
8.		Advanced Control and Instrumentation Laboratory		0	0	4		2
9.		Mini Project with Seminar		2	0	0		2
			TOTAL					22

SEMESTER III

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Program Elective IV (one from list of electives V)		3	0	0		3
2.		Program Elective V (one from list of electives V)		3	0	0		3
3.		Open Elective (one from list of 6 courses)		3	0	0		3
4.								
PRACTICALS								
5.		Dissertation-1 / Industrial Project Phase I		0	0	12		6
			TOTAL					15

SEMESTER IV

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1.		Dissertation-2/ Industrial Project Phase II		0	0	24		12
			TOTAL					12

Dr.D.Vasanthi
UG Coordinator
C&S R-2019

N.Pappa 3/12/2018

Dr.N.Pappa
PG Coordinator
C&S R-2019

3/12/18

Dr. J.Prakash
Prof. & Head, IE

MINUTES

DEPARTMENT OF INSTRUMENATION EN
MADRAS INSTITUTE OF TECHNOL
ANNA UNIVERSITY :: CHROMEP

Minutes of the series of Third Curriculum and Syllabus Revision Meeting (C&S R-2019) for UG & PG, held from 04.12.2018 to 7.12.2018 from 9.30 AM in the KVN Seminar Hall, Dept. of IE.

Members Present:
List enclosed (annexure 1)

Minutes:

A series of meetings as per schedule has been conducted to finalize the syllabus R-2019.

Sl.No.	Schedule		Specialization
	Date	Time	
1.	4.12.2018	9.30 AM	Control and Automation
2.	5.12.2018	9.30 AM	Electrical and Electronics
3.	6.12.2018	9.30 AM	Computers and Communication
4.	7.12.2018	9.30 AM	Measurement and Instrumentation

- Dr. J.Prakash presented the finalized curriculum of UG and PG R-2019.
- Subjects under each specialization were discussed in detail. The faculty members were requested to give their suggestions based on the current requirement in industry and based on the syllabus followed in renowned institutes in India and abroad.
- HoD requested all the faculty members to frame the course objectives and minimum of 6 Course Outcomes relating to graduate attributes for the respective subjects.
- He also requested them to do CO/PO mapping for the subjects.
- He insisted the faculty members to include new and latest edition of reference books and text books.
- Based on the suggestions obtained from all the faculty members the following revision in R-2015 syllabus of UG was carried out to revise UG R-2019. (annexure 2)

  i. The content highlighted in the red colour will be removed from the syllabus
  ii. The contents highlighted in the green colour will be included

iii. The contents in the green colour have to be included based on the suggestions from the respective co-ordinators.

- Based on the changes carried out, the respective co-ordinators were requested to give a presentation to HoD, after which the syllabus for R-2019 may be finalized.

Dr.D.Vasanthi
UG Coordinator
C&S R-2019

4/12/2018
Dr.N.Pappa
PG Coordinator
C&S R-2019

Dr. J.Prakash
Prof. & Head, IE

CENTRE FOR ACADEM
ANNA UNIVER
CHENNAI – 600 02

Dr. R. RAJU
DIRECTOR

SYLLA
SUB C

077 / 76
352272

Letter No. 3680/AU/CAC/SSC/FE/2018 26.11.2018

To
The Head
Department of Instrumentation Engineering
MIT Campus
Anna University
Chennai – 600 044.

Sir,

Sub: Meeting of the Syllabus Sub Committees – Approved Members List - reg.

******

The lists of Syllabus Sub Committee members for all UG and PG programmes of Department of Instrumentation Engineering, approved by the Vice Chancellor are enclosed herewith. In Coordination with the Chairperson, Faculty of Electrical Engineering, **you are hereby requested to convene the meetings of the Syllabus Sub Committees to finalize the Curriculum and Syllabi for all UG and PG programmes concerned within the month of December 2018.** Necessary financial support and guidelines will be provided from the Centre for Academic Courses. The Time, Date and Venue of the Syllabus Sub Committee Meetings may please be informed to the Centre for Academic Courses through the Chairperson by mail (cacannauniv@gmail.com) and by letter **on or before 07.12.2018.**

Thanking You,

Yours faithfully,

DIRECTOR

Encl: Lists of Syllabus Sub Committee Members.

Copy to:

1. The Chairperson, Faculty of Electrical Engineering, Anna University, Chennai – 25.
2. The CAC. & The Stock File.

ANNA UNIVERSITY:: CHENNAI-25
SYLLABUS SUB COMMITTEE FOR FRAMING CURRICULA AND SYLLABI
UG PROGRAMME (R-2019)
UNIVERSITY DEPARTMENTS
FACULTY OF ELECTRICAL ENGINEERING
B.E. ELECTRONICS AND INSTRUMENTATION ENGINEERING
MEMBERS LIST

S.NO	NAME,DESIGNATION AND ADDRESS	PHONE NUMBER AND EMAIL.ID
CHAIRPERSON - FACULTY OF ELECTRICAL ENGINEERING		
1	**Dr. B. Umamaheshwari,** Chairperson, Faculty of Electrical Engineering, Anna University, Chennai-25	9444051782 umamahesb@annauniv.edu
HEAD OF THE DEPARTMENT OFFERING THE UG PROGRAMME		
2.	**Dr. J. Prakash,** Professor, Department of Instrumentation Engineering, MIT Campus, Anna University, Chennai-44	9444860188 prakaiit@gmail.com
SENIOR FACULTY OF THE DEPARTMENT		
3.	**Dr. T. Thyagarajan** Professor, Department of Instrumentation Engineering, MIT Campus, Anna University, Chennai-44	9444104850 thyagu_vel@yahoo.co.in
4.	**Dr. V. Natarajan,** Professor, Department of Instrumentation Engineering, MIT Campus, Anna University, Chennai-44	9445193536 natraj@mitindia.edu
5.	**Dr. S.Srinivasan,** Professor, Department of Instrumentation Engineering, MIT Campus, Anna University, Chennai-44	9382882300 srini@mitindia.edu
6.	**Dr. K. Latha,** Professor, Department of Instrumentation Engineering, MIT Campus, Anna University, Chennai-44	9500064042 lat_padhu@yahoo.com

SENIOR STUDENTS REPRESENTATIVES		
7.	**Mr. Vishnu Varadan,** B.E. (E&I) - FINAL YEAR STUDENT, Department of Instrumentation Engineering, MIT Campus, Anna University, Chennai-44	9940622798 ultramicroscopic2012@gmail.com
8.	**Ms. Harshine Varuna,** B.E. (E&I) - FINAL YEAR STUDENT, Department of Instrumentation Engineering, MIT Campus, Anna University, Chennai-44	9941016698 harshine2007@gmail.com
ALUMNI OF THE UG PROGRAMME		
9.	**Mr. S. Parameswaran,** Senior Analyst Engineering, M/s Caterpillar India Private Limited Chennai- 600 113.	76074752 paramesh282@ymail.com
REPRESNTATIVES FROM USER INDUSTRIES		
10	**Mr. C. J. Jayaharan,** Senior Manager Automation Projects, M/s Ramco Systems Limited, Chennai- 600 113	9884264212 jayaharancj@gmail.com
11	**Mr. S. Vijayaraghavan,** Automation Consultant, Raja annamalaipuram, Chennai-28	9444494795 vijayrag.viji@gmail.com
REPRESENTATIVES FROM CENTRAL/STATE UNIVERSITIES		
12.	**Dr. M. Umapathy,** Professor, Department of Instrumentation & Control Engineering, NIT Trichy, Trichy – 620 015.	9443013136 umapathy@nitt.edu
13.	**Dr. Boby George,** Associate Professor, Department of Electrical Engineering, IIT Madras, Chennai-36	044-22574465 boby@iitm.ac.in

FACULTY FROM ALLIED DEPARTMENT		
14.	**Dr. Mala John,** Professor, Department of Electronics Engineering, MIT campus, Anna university, Chennai-44	9444443706 malajohnmit@gmail.com

DIRECTOR
ACADEMIC COURSES

ANNA UNIVERSITY CHENNAI
DEPARTMENT OF INSTRUMENTATION ENGINEERING
M.I.T. CAMPUS: CHENNAI – 600 044

Dr.J. PRAKASH
PROFESSOR & HEAD

Dated: 30.11.2018

CIRCULAR

The Faculty Meeting is scheduled on 30.11.2018 at 02.30 PM to discuss the following agenda points:

- UG Curriculum Revision (R-2019)
- PG Curriculum Revision (R-2019)
- Any other matter.

May I request all the faculty members to attend the meeting and offer valuable suggestion.

PROFESSOR & HEAD
30/11/18

HEAD OF THE DEPARTMENT
DEPT. of INSTRUMENTATION ENGINEERING
M.I.T. CAMPUS, ANNA UNIVERSITY
CHROMEPET, CHENNAI-600 044.

Off: 22357077 / 73
22357074
Fax / Dir :22352272

CENTRE FOR ACADEMIC COURSES
ANNA UNIVERSITY
CHENNAI – 600 025

DIRECTOR ACADEMIC COURSES ANNA UNIVERSITY CHENNAI-600 025

Dr. R. RAJU
DIRECTOR
Letter No.3898/AU/CAC/2018

03.12.2018

To

Heads of the Departments
CEG/MIT/ACT/SAP Campuses
Anna University
Chennai – 600 025.

Dear Sir/Madam,

Sub: AU – Syllabus Sub Committee Meeting – Guidelines – University Departments – Regulations R-2019 (CBCS) – Reg.
Ref: Letter No. 3680/AU/CAC/SSC/FT/2018, dated:20.11.2018

*****

In Continuation to the letter under reference noted above, the following points may be noted:

- The Heads of the Departments are requested to convene the Syllabus Sub Committee Meetings before 11.01.2019.
- Salient features of the Regulations R - 2019 will be presented by the respective Chairpersons and the Curriculum and Syllabi of the degree programmes (UG & PG offered by the Degree Programmes) are to be presented by the Head of the Departments concerned at the time of SSC Meetings.
- While sending the intimation letter to the members, all the members may be requested to acknowledge the receipt of the letter and an acceptance letter may be obtained in this regard. A format of the intimation letter is enclosed herewith.
- Please find enclosed the format for the Minutes of the SSC Meeting (additional points, if any may be added suitably).
- While preparing Curriculum and Syllabi, care to be taken to satisfy the AICTE-NBA accreditation criteria and outcome based education. Vision, Mission, Program Education Objectives, Program Outcomes to be defined clearly.
- Please refer the following link: http://www.nbaind.org/files/PEOs-Curriculum-and-CO-PO-mapping-21-may-2016.pdf

Yours faithfully,

3/12/18

DIRECTOR

Encl: As above

Copy to:

1. The Stock File, CAC.

Format of Intimation Letter

Lr. No. _____ Date:_____

From

The Head of the Department
Department of _____
Anna University
Chennai – 25.

To

The Member
Syllabus Sub Committee Meeting
Anna University
Chennai -25.

Dear Sir/Madam,

Sub: Anna University – Syllabus Sub Committee Meeting – Revision of Curriculum and Syllabi under R-2019 for the **University Departments - Faculty of** _____ – Meeting Schedule – Information – Reg.

****

Greetings. I am pleased to welcome you, as a Syllabus Sub Committee member nominated by the Vice-Chancellor, for the first Syllabus Sub Committee Meeting of the **Faculty of** _____ scheduled on __.__.**2018 (day)** at _____ **AM** in _____ **Hall, ____ Campus**, Anna University, Chennai.

The Agenda will be:

- Framing of Curriculum and Syllabi of UG/PG Programmes.

Please come prepared with your inputs, so that we can prepare quality Curriculum and Syllabi. The main discussions will happen during the Syllabus Sub Committee meeting itself.

After detailed discussions, the draft version of the Curriculum and Syllabi of B.E./B.Tech./M.E./M.Tech. Programmes will be finalized. The AICTE guidelines are available at https://www.aicte-india.org/education/model-syllabus - for reference.

The external members may kindly provide the following informations:

- Name:
- Name of the Bank and Branch:
- SB Account Number:
- IFSC Code:

I am to request you to kindly send your acceptance letter on or before _____.2018, either by post or by E-mail (_____).

A format of the acknowledgement letter enclosed herewith.

Thanking You

Yours faithfully,

(The Head of the Departments)

Acceptance Letter

Date:_____

From

To
The Head of the Department
Department of _____
Anna University,
Chennai – 600 025.

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of _____ - Acceptance – Reg.

Ref: Lr. No. _____, Dated:_____

*****

With reference to the above, I hereby accept / regret to accept* to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on _____ in the Faculty of _____, Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id :
2. Mobile no. :

Thanking you,

Yours faithfully,

* Strike out which ever is not applicable.

FACULTY OF _____

ANNA UNIVERSITY, CHENNAI

Minutes of the Syllabus Sub Committee Meeting

Minutes of the Syllabus Sub Committee meeting of the *Name of the degree Programmes* degree programme under R - 2019, Faculty of _____ offered at University Departments was held on 00.12.2018 at 00.00 AM at _____ Hall, _____ Campus, Anna University, Chennai.

The following members were present:

1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		

DEPARTMENT OF INSTRUMENATION ENGINEERING
MADRAS INSTITUTE OF TECHNOLOGY
ANNA UNIVERSITY :: CHROMEPET

Faculty Meeting is scheduled on 03.12.2018 at 09.30 AM at KVN Seminar Hall to discuss the following agenda points:

1. UG - Curriculum & Syllabi Revision R2019
2. PG - Curriculum & Syllabi Revision R2019
3. Any other matter

Co-Ordinator
Curriculum & Syllabus Revision R2019
(UG)

HoD,IE 1/12/18

HEAD OF THE DEPARTMENT
DEPT. of INSTRUMENTATION ENGINEERING
M.I.T. CAMPUS, ANNA UNIVERSITY
CHROMEPET, CHENNAI-600 044.

rediffmail Mailbox of vasanthi_d1

Subject: Faculty Meeting is Scheduled on 12.11.2018

From: MIT Instrumentation <mitieau@gmail.com> on Mon, 12 Nov 2018 09:32:09

To: thyagu_vel@yahoo.co.in, natraj@mitindia.edu, "Dr. Prakash Jagadeesan" <prakaiit@gmail.com>, manamalli_m@yahoo.com, npappa@rediffmail.com, lat_padhu@yahoo.com, srini@mitindia.edu, skumar@mitindia.edu, vasanthi_d1@rediffmail.com, Sabitha Ramakrishnan <sabitha.ramakrishnan@gmail.com>, sutha_muthu@hotmail.com, mythily_eie@yahoo.co.in, csg1275@yahoo.com, kamalanand@mitindia.edu, Kalpana Dharmalingam <kalpanaspec@gmail.com>, Meyyappan Sankaranarayanan <meys.narayan@gmail.com>, vinothbalaji@rediffmail.com, vijayakarthick@yahoo.co.in, Ganeshram Arumugam <agram72@gmail.com>, Selva Kumar <selvakumark12782@gmail.com>, govindan vedhanayagam <gvkovind@yahoo.co.in>, KAYAL <kayal7j@gmail.com>, mrksridhar@gmail.com, thanga ganapathy <thangaganapathy52@gmail.com>, Arockia Sukanya <arockia.sukanya@gmail.com>, pks@mitindia.edu

---

Faculty Meeting is Scheduled on 12.11.2018 at 01.00 PM at KVN Seminar Hall to discuss the following agenda points:

1. UG - Curriculum & Syllabi Revision R2019
2. PG - Curriculum & Syllabi Revision R2019
3. Any other matter

rediffmail Mailbox of vasanthi_d1

Subject: UG/PG Curriculum Revision - Reg.

From: Dr. Prakash Jagadeesan <prakaiit@gmail.com> on Sat, 01 Dec 2018 17:15:41

To: MIT Instrumentation <mitieau@gmail.com>

Cc: Thanagavelu Thyagarajan <thyagu_vel@yahoo.co.in>, "Dr.V.Natarajan, MIT, Anna University" <natraj@mitindia.edu>, Pappa Natarajan <npappa.mit@gmail.com>, dm <manamalli_m@yahoo.com>, Mr.S.Srinivasan MIT, Anna University <srini@mitindia.edu>, "S. Kumar MIT, Anna University" <skumar@mitindia.edu>, KL <lat_padhu@yahoo.com>, DV <vasanthi_d1@rediffmail.com>, sutha_muthu@hotmail.com, mythily nil <mythily_eie@yahoo.co.in>, Shanthi Ganesh <csg1275@yahoo.com>, Kalpana Dharmalingam <kalpanaspec@gmail.com>, "K.Kamalanand,(EI) MIT,Anna University" <kamalanand@mitindia.edu>, Sabitha <sabitha.ramakrishnan@gmail.com>, Ganeshram Arumugam <agram72@gmail.com>, vijayakarthick@yahoo.co.in, vinothbalaji@rediffmail.com, Meyyappan Sankaranarayanan <meys.narayan@gmail.com>, selva kumar <selvakumark12782@gmail.com>, sridhar rk <mrksridhar@gmail.com>, govindan v <gvkovind@yahoo.co.in>, Kayal Vizhi <kayal7j@gmail.com>, thanga ganapathy <thangaganapathy52@gmail.com>, Arockia Sukanya <arockia.sukanya@gmail.com>, "Dr.P.Kanagasabapathy MIT, Anna University" <pks@mitindia.edu>

Dear All

I am planning to conduct a series of meetings to finalize the R-2019 UG curriculum and R-2019 PG curriculum. In this connection, I seek all your support and also I request all the faculty members to be present and offer your valuable suggestions. Please note that curriculum design is a very important exercise and we have to spend the quality time the whole next week to revise thoroughly our curriculum. The syllabus sub-committee meeting is likely to be held on 8/12/2018. May I request all the members of the syllabus sub-committee to present for the meeting. if there is any change in the schedule, you will be informed.

The schedule for the whole week is as follows

1. 3/12/2018 - 9.30 AM - 1 PM - Finalizing the list of subjects (Professional Core, Professional Electives etc. to be offered under R-2019 UG Curriculum) after thorough discussion with the various sub-groups. PEO(s) and PO(s) revisions and Formulation of PSO(s).
2. 3/12/2018 - 2.00 PM - 5 PM - Finalizing the list of subjects (Professional Core, Professional Electives etc. to be offered under R-2019 PG Curriculum) after thorough discussion with the various sub-groups and Finalizing the OE subjects to be offered by the Department for other Department UG & PG students
3. 4/12/2018 (9.30 AM -1.00 PM (FN) & 2.00 - 5.00 PM (AN)) - Modifying the contents of various Electrical & Electronics courses (Theory and Practical Subjects) to be offered under R-2019 UG Curriculum and under R-2019 PG Curriculum. Revising the CO(s) and also Mapping CO(s) with PO(s) and PO(s) with PEO(s). Addition and Deletion of Textbooks and Reference books.
4. 5/12/2018 (9.30 AM -1.00 PM (FN) & 2.00 - 5.00 PM (AN)) - Modifying the contents of various Control & Automation courses (Theory and Practical Subjects) to be offered under R-2019 UG Curriculum and under R-2019 PG Curriculum. Revising the CO(s) and also Mapping CO(s) with PO(s) and PO(s) with PEO(s). Addition and Deletion of Textbooks and Reference books
5. 6/12/2018 (9.30 AM -1.00 PM (FN) & 2.00 - 5.00 PM (AN)) - Modifying the contents of various Computer and Communication courses (Theory and Practical Subjects) to be offered under R-2019 UG Curriculum and under R-2019 PG Curriculum. Revising the CO(s) and also Mapping CO(s) with PO(s) and PO(s) with PEO(s). Addition and Deletion of Textbooks and Reference books
6. 7/12/2018 (9.30 AM -1.00 PM (FN) & 2.00 - 5.00 PM (AN)) - Modifying the contents of various Measurement and Instrumentation courses(Theory and Practical Subjects) to be offered under R-2019 UG Curriculum and under R-2019 PG Curriculum. Revising the CO(s) and also Mapping CO(s) with PO(s) and PO(s) with PEO(s). Addition and Deletion of Textbooks and Reference books.

Prakash

On Sat, Dec 1, 2018 at 2:28 PM MIT Instrumentation <mitieau@gmail.com> wrote:

> Respected Sir / Madam,
>
> Faculty Meeting is Scheduled on 03.12.2018 at 09.30 AM at KVN Seminar Hall to discuss the following agenda points:
> 1. Finalize the UG - Curriculum R2019
> 2. Finalize the PG - Curriculum R2019

ANNA UNIVERSITY
DEPARTMENT OF INSTRUMENTATION ENGINEERING
M.I.T. CAMPUS :: CHENNAI - 600 044

Dr.J. PRAKASH
Professor & Head

13.12.2018

To
The Director,
Centre for Academic Courses,
Anna University,
Chennai – 600 025.

Through the Proper Channel

Sir,

Sub: UG (E&I) – MIT- Syllabus Sub Committee meeting (R-2019) scheduled on 22.12.2018 – Reg.
Ref: Letter No.3680/AU/CAC/SSC/FE/2018. Dated 26.11.2018.

With the above reference cited, I would like to inform that the Syllabus Sub Committee meeting for UG Programme B.E Electronics and Instrumentation Engineering to be offered under R-2019 by the Department of Instrumentation Engineering, MIT campus, is scheduled on 22.12.2018 (Saturday) from 9.30 AM at the Department of Instrumentation Engineering, MIT to finalize the curriculum and syllabus.

14 members will be attending the above meeting, hence it is requested to make necessary arrangements towards supply of stationery items and hospitality.

for 13/12/18
PROFESSOR & HEAD
HEAD OF THE DEPARTMENT
DEPT. OF INSTRUMENTATION ENGINEERING
M.I.T. CAMPUS, ANNA UNIVERSITY

CURRICULUM

SEMESTER I

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Technical English I	HSMC	4	0	0	4	4
2.		Mathematics I	BSC	3	1	0	4	4
3.		Engineering Physics	BSC	3	0	0	3	3
4.		Engineering Chemistry	BSC	3	0	0	3	3
5.		Engineering Graphics	ESC	1	0	4	5	3
PRACTICALS								
6.		Basic Sciences Laboratory	BSC	0	0	4	4	2
7.		Workshop Practices Laboratory	ESC	0	0	4	4	2
			TOTAL				**27**	**21**

SEMESTER II

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Technical English II	HSMC	4	0	0	4	4
2.		Mathematics II	BSC	3	1	0	4	4
3.		Programming for Problem Solving	ESC	3	0	0	3	3
4.		Basics of Electrical and Instrumentation Engineering	ESC	3	0	0	3	3
5.		Engineering Mechanics	ESC	3	1	0	4	4
6.		Materials Science	BSC	3	0	0	3	3
PRACTICALS								
7.		Computer Practices Laboratory	ESC	0	0	4	4	2
8.		Electrical and Instrumentation	ESC	0	0	4	4	2

		Laboratory						
			TOTAL	19	2	8	29	25

SEMESTER III

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Mathematics III	BSC	3	1	0	4	4
2.		Analysis of Electric Circuits	PCC	3	0	0	3	3
3.		Thermodynamics and Fluid Mechanics	ESC	3	0	0	3	3
4.		Electronics for Analog Signal Processing- I	PCC	3	0	0	3	3
5.		Signals and Systems	PCC	3	0	0	3	3
6.		Humanities – 1	HSMC	3	0	0	3	3
PRACTICALS								
7.		Electronics for Analog Signal Processing Laboratory	PCC	0	0	4	4	2
8.		Circuit Simulation Laboratory	PCC	0	0	4	4	2
			TOTAL	18	1	8	27	23

SEMESTER IV

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Management	HSMC	3	0	0	3	3
2.		Environmental Sciences*	MC	3	0	0	3	0
3.		Instrument Transducers	PCC	3	0	0	3	3
4.		Electronics for Analog Signal Processing- II	PCC	3	0	0	3	3
5.		Electrical and Electronic Measurements	PCC	3	0	0	3	3
6.		Digital System Design	PCC	3	0	0	3	3
PRACTICALS								
7.		Sensors and Signal Conditioning Laboratory	PCC	0	0	4	4	2
8.		Digital System Design Laboratory	PCC	0	0	4	4	2
			TOTAL	18	0	8	26	19

*This Subject can also be offered in VI semester.

SEMESTER V

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Humanities – II	HSMC	3	0	0	3	3
2.		Indian Constitution, Essence of Indian Knowledge Tradition	MC	3	0	0	3	0
3.		Control System Design	PCC	3	0	0	3	3
4.		Industrial Instrumentation - I	PCC	3	0	0	3	3
5.		Embedded Systems	PCC	3	0	0	3	3
6.		Professional Elective - I	PEC	3	0	0	3	3
PRACTICALS								
7.		Control and Instrumentation Laboratory	PCC	0	0	4	4	2
8.		Embedded System Laboratory	PCC	0	0	4	4	2
9.		Summer Internship / Summer Project (Minimum 4 Weeks)	EEC	0	0	0	0	2
			TOTAL	**18**	**0**	**8**	**26**	**21**

SEMESTER VI

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Process Control	PCC	3	0	0	3	3
2.		Industrial Instrumentation - II	PCC	3	0	0	3	3
3.		Discrete Time Signal Processing	PCC	3	0	0	3	3
4.		Professional Elective - II	PEC	3	0	0	3	3
5.		Professional Elective - III	PEC	3	0	0	3	3
6.		Open Elective - I	OEC	3	0	0		3
PRACTICALS								
7.		Instrumentation System Design Laboratory	PCC	0	0	4	4	2
8.		Process Control Laboratory	PCC	0	0	4	4	2
			TOTAL	**18**	**0**	**8**	**23**	**22**

SEMESTER VII

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Industrial Automation Systems	PCC	3	0	0	3	3
2.		Process Data Analytics	PCC	3	0	0	3	3
3.		Industrial Data Communication	PCC	3	0	0	3	3
4.		Professional Elective - IV	PEC	3	0	0	3	3
5.		Professional Elective - V	PEC	3	0	0	3	3
6.		Open Elective - II	OEC	3	0	0		3
PRACTICALS								
7.		Industrial Automation Laboratory	PCC	0	0	4	4	2
8.		Project 1/Phase I	EEC	0	0	6		3
			TOTAL	**18**	**0**	**10**	**19**	**23**

SEMESTER VIII

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Professional Elective- VI	PEC	3	0	0	3	3
2.		Professional Elective - VII	PEC	3	0	0	3	3
PRACTICALS								
3.		Project 2/ Phase II	EEC	0	0	16		8
			TOTAL	**6**		**16**	**6**	**14**

HUMANITIES AND SOCIAL SCIENCE INCLUDED MANAGEMENT COURSES (HSMC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
1.	HSMC	Technical English I	4	0	0	4	I

Total Credits	21		

OPEN ELECTIVE COURSES (OEC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
1.	OEC	Open Elective-I	3	0	0	3	VI
2.	OEC	Open Elective-II	3	0	0	3	VII
					Total Credits	6	

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
1.	EEC	Summer Internship / Summer Project (Minimum 4 Weeks)	0	0	0	2	V
2.	EEC	Project 1/Phase I	0	0	6	3	VII
3.	EEC	Project 2/ Phase II	0	0	16	8	VIII
					Total Credits	13	

MANDATORY COURSES (MC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
1.	MC	Environmental Sciences*	3	0	0	0	IV
2.	MC	Indian Constitution, Essence of Indian Knowledge Tradition	3	0	0	0	V
					Total Credits	3	

5. Summary

Name of the Programme			
	Subject Area	Credits per Semester	Credits Total

16.	PCC	Embedded System Laboratory	0	0	4	2	V
17.	PCC	Process Control	3	0	0	3	VI
18.	PCC	Industrial Instrumentation - II	3	0	0	3	VI
19.	PCC	Discrete Time Signal Processing	3	0	0	3	VI
20.	PCC	Instrumentation System Design Laboratory	0	0	4	2	VI
21.	PCC	Process Control Laboratory	0	0	4	2	VI
22.	PCC	Industrial Automation Systems	3	0	0	3	VII
23.	PCC	Industrial Data Communication	3	0	0	3	VII
24.	PCC	Process Data Analytics	3	0	0	3	VII
25.	PCC	Industrial Automation Laboratory	0	0	4	2	VII
					Total Credits	66	

PROFESSIONAL ELECTIVE COURSE (PEC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
1.	PEC	Professional Elective-I	3	0	0	3	V
2.	PEC	Professional Elective-II	3	0	0	3	VI
3.	PEC	Professional Elective-III	3	0	0	3	VI
4.	PEC	Professional Elective-IV	3	0	0	3	VII
5.	PEC	Professional Elective-V	3	0	0	3	VII
6.	PEC	Professional Elective-VI	3	0	0	3	VIII
7.	PEC	Professional Elective-VII	3	0	0	3	VIII

8.	ESC	Thermodynamics and Fluid mechanics	3	0	0	3	III
					Total Credits	22	

PROFESSIONAL CORE COURSES (PCC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
1.	PCC	Analysis of Electric Circuits	3	0	0	3	III
2.	PCC	Electronics for Analog Signal Processing- I	3	0	0	3	III
3.	PCC	Signals and Systems	3	0	0	3	III
4.	PCC	Electronics for Analog Signal Processing Laboratory	0	0	4	2	III
5.	PCC	Circuit Simulation Laboratory	0	0	4	2	III
6.	PCC	Instrument Transducers	3	0	0	3	IV
7.	PCC	Electronics for Analog Signal Processing- II	3	0	0	3	IV
8.	PCC	Electrical and Electronic Measurements	3	0	0	3	IV
9.	PCC	Digital System Design	3	0	0	3	IV
10.	PCC	Sensors and Signal Conditioning Laboratory	0	0	4	2	IV
11.	PCC	Digital System Design Laboratory	0	0	4	2	IV
12.	PCC	Control System Design	3	0	0	3	V
13.	PCC	Industrial Instrumentation - I	3	0	0	3	V
14.	PCC	Embedded Systems	3	0	0	3	V
15.	PCC	Control and Instrumentation Laboratory	0	0	4	2	V

2.	HSMC	Technical English II	4	0	0	4	II
3.	HSMC	Humanities – 1	3	0	0	3	III
4.	HSMC	Management	3	0	0	3	IV
5.	HSMC	Humanities – II	3	0	0	3	V
		Total Credits:				17	

BASIC SCIENCE COURSE (BSC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
1.	BSC	Mathematics I	3	1	0	4	I
2.	BSC	Engineering Physics	3	0	0	3	I
3.	BSC	Engineering Chemistry	3	0	0	3	I
4.	BSC	Basic Sciences Laboratory	0	0	4	2	I
5.	BSC	Mathematics II	3	1	0	4	II
6.	BSC	Materials Science	3	0	0	3	II
7.	BSC	Mathematics III	3	1	0	4	III
		Total Credits				23	

ENGINEERING SCIENCE COURSE (ESC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
1.	ESC	Engineering Graphics	1	0	4	3	I
2.	ESC	Workshop Practices Laboratory	0	0	4	2	I
3.	ESC	Programming for Problem Solving	3	0	0	3	II
4.	ESC	Basics of Electrical and Instrumentation Engineering	3	0	0	3	II
5.	ESC	Engineering Mechanics	3	1	0	4	II
6.	ESC	Computer Practices Laboratory	0	0	4	2	II
7.	ESC	Electrical and Instrumentation Laboratory	0	0	4	2	II

		I	II	III	IV	V	VI	VII	VIII	
	HSMC	4	4	3	3	3				17
	BSC	12	7	4						23
	ESC	5	14	3						22
	PCC			13	16	13	13	11		66
	PEC					3	6	6	6	21
	OEC						3	3		6
	EEC					2		3	8	13
	Non-Credit /(Mandatory)				0	0				0
									TOTAL	**168**

PG - CURRICULUM R2019

SEMESTER I

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Transducers and Smart Instruments		3	0	0		3
2.		Advanced Instrumentation Systems		3	0	0		3
3.		Process Control: Design and Analysis		3	0	0		3
4.		Advanced Digital Signal Processing		3	0	2		4
5.		Program Elective I (one from list of electives I)		3	0	0		3
6.		Research Methodology and IPR		2	0	0		2
7.		Audit Course – I (one from list of Audit courses)		2	0	0		0
PRACTICALS								
8.		Process Control and Instrumentation Laboratory		0	0	4		2
9.		Modeling and Simulation Laboratory		0	0	4		2
			TOTAL					22

SEMESTER II

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Advanced Process Control		3	0	0		3
2.		Instrumentation System Design		3	0	2		4
3.		Program Elective II (one from list of electives III)		3	0	0		3
4.		Program Elective III (one from list of electives IV)		3	0	0		3
5.		Audit Course –II (one from list of Audit courses)		2	0	0		0
6.		Machine Learning and Data Analytics		3	0	0		3

PRACTICALS								
7.		Industrial Automation Laboratory		0	0	4		2
8.		Advanced Control and Instrumentation Laboratory		0	0	4		2
9.		Mini Project with Seminar		2	0	0		2
			TOTAL					22

SEMESTER III

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Program Elective IV (one from list of electives V)		3	0	0		3
2.		Program Elective V (one from list of electives V)		3	0	0		3
3.		Open Elective (one from list of 6 courses)		3	0	0		3
4.								
PRACTICALS								
5.		Dissertation-1 / Industrial Project Phase I		0	0	12		6
			TOTAL					15

SEMESTER IV

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1.		Dissertation-2/ Industrial Project Phase II		0	0	24		12
			TOTAL					12

2015505012 Harshine Varuna V
2015505559 Vishnu Varadan.

Suggestions

1. Control Systems can be moved forward by one semester (ie) in the 4th semester. (Similarly PC also moved forward)
2. Data Structures the subject (or) the lab must be more placement oriented with lab experiments as questions from placements.
3. II Lab must be moved forward as students may parallely learn & perform experiments similarly for Transducers Lab
4. Electives can be offered from the 5th Semester itself.
5. Signals and Systems must be in the semester before DSP, as students are having a slight difficulty in remembering the entire concepts.
6. PIC subject & Laboratory must be moved forward (6th Semester) so that it may aid students with their projects.
7. Electronics & Instrumentation subjects could be taught parallely since we had electronics oriented courses in the first few semesters & followed by instrumentation oriented courses in the next semesters.

rediffmail Mailbox of vasanthi_d1

Subject: Fwd: Syllabus committee reg

From: Dr. Prakash Jagadeesan <prakaiit@gmail.com> on Sun, 23 Dec 2018 12:16:34

To: DV <vasanthi_d1@rediffmail.com>

FYI
---------- Forwarded message ---------
From: <malajohn@annauniv.edu>
Date: Fri, Dec 21, 2018 at 12:32 PM
Subject: Syllabus committee reg
To: Dr. Prakash Jagadeesan <prakaiit@gmail.com>
Cc: Malajohnmit <malajohnmit@gmail.com>

Dear Dr. Prakash,

As I have a personal engagement tomorrow scheduled a few months back, I am not in a position to attend the syllabus committee meeting of BE (Instrumentation) scheduled for tomorrow.

However, I had a series of discussions with Dr. Sabitha and other colleagues. I have given the suggestions from my end for the modifications in the syllabi for the following subjects:

1. Signals 7 Systems
2. Principles of Communication Engg
3. Discrete time signal processing
4. Introduction to Image and video processing

Minor modifications have been suggested for few other syllabi.

I would also like to request you to add the following electives (or equivalent title)

1. Machine Learning
2. Industrial IoT
3. Cryptography for industry networks

Warm regards,

MALA JOHN
Professor
Dept Electronics Engineering
MIT campus of Anna University
Chennai

rediffmail Mailbox of vasanthi_d1

Subject: Fwd: Btech syllabus is good and industry suitable

From: Dr. Prakash Jagadeesan <prakailt@gmail.com> on Sun, 23 Dec 2018 12:42:41

To: DV <vasanthi_d1@rediffmail.com>

fyi

---------- Forwarded message ---------
From: **Rasamsetti Saradhi** <rasamsetti123@gmail.com>
Date: Wed, Dec 5, 2018 at 1:35 PM
Subject: Btech syllabus is good and industry suitable
To: <prakailt@gmail.com>

Dear sir,

I R V SARADHI worked for Kuwait oil company nearly 24 years and as area Instrumentation engineer .currently retired living in Hyderabad.
I have gone through your B.Tech (inst) SYLLABUS IS GOOD
Many thanks for you and teaching regulations and standards APV I SA .
Regards
R vs a r a d hi ,M tech(I I T Roorkee)
Kuwait Oil Company (ex)
9949611107
Hyderabad 500038

rediffmail Mailbox of vasanthi_d1

Subject: Fwd:

From: Dr. Prakash Jagadeesan <prakaiit@gmail.com> on Mon, 24 Dec 2018 10:31:07

To: DV <vasanthi_d1@rediffmail.com>

FYI

---------- Forwarded message ---------
From: **Boby George** <boby@iitm.ac.in>
Date: Sat, Dec 22, 2018 at 12:56 PM
Subject: Re:
To: Dr. Prakash Jagadeesan <prakaiit@gmail.com>

Dear Professor
I agree with almost all the points that you listed.
Some minor points are mentioned against the points that you listed below.
Thank you for the opportunity.
Boby

On Thu, Dec 20, 2018 at 8:37 PM Dr. Prakash Jagadeesan <prakaiit@gmail.com> wrote:

> Dear Prof. Boby George
>
> Please find attached the draft curriculum and syllabus for your reference.
>
> Please go through the curriculum and the syllabus of the following core subjects
>
> Instrument Transducers

Read. It is fine to my knowledge.

> Electrical and Electronic Measurements

Next time, you may remove the following from course objective. In my opinion, this is very specific, for a general course like ELECTRICAL AND ELECTRONIC MEASUREMENTS
Elaborate discussion about potentiometer and to impart knowledge on various instrument transformers and to understand the calibration of various meters.
Other portions are alright. I agree with the colored text.

> Industrial Instrumentation – I

No change suggested. Yes, red portion may be removed.

> Industrial Instrumentation – II

Yes, agree. No other suggestion.

> Sensors and Signal Conditioning Circuits Laboratory

Hall effect is in red. It is alright. Since those are used in various applications, it may be retained. It is a minor suggestion.

> and offer your comments, please.
> In the attached pdf document
> The text highlighted in red colour will be deleted after discussion with the experts
> The text highlighted in Blue colour will be added after discussion with the experts
> The text highlighted in the Black colour we would like to retain
>
> Prakash

On Thu, Dec 20, 2018 at 9:38 AM Boby George <boby@iitm.ac.in> wrote:

Dear Professor
Thank you for the mail and the opportunity.
On 22nd, I am occupied with another meeting. I have already agreed for it and difficult change.
If possible, kindly share the syllabus and if at all there is some suggestion, I shall provide over the email.
Yours sincerely
Boby

On Wed, Dec 19, 2018 at 6:45 PM Dr. Prakash Jagadeesan <prakaiit@gmail.com> wrote:

Dear Prof. Boby George

Hope everything is fine at your end

I am happy to inform you that you have been appointed as an External Expert member of the Syllabus Sub-committee and I hope you might have received the official communication from the Director Academic Course Anna University Chennai.

In this connection, the syllabus sub-committee meeting for the B.E(E&I) Programme offered by the Department of Instrumentation Engineering MIT Campus is scheduled as follows:

Venue: Prof. KVN Seminar Hall, Department of Instrumentation Engineering MIT Campus, Anna University Chennai-44

Date & Time: 22/12/2018 & 10 AM

May I request you to kindly attend the meeting. A line of reply is highly appreciated

Prakash

Sender notified by
Mailtrack

Salient points of Regulations 2019

B.E. / B.Tech. Programmes
University Departments

I. STRUCTURE OF THE PROGRAMMES

Categorization of Courses

Every B.E. / B. Tech. Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

i. **Humanities and Social Sciences including Management Courses (HSMC)** include Technical English, Employability Skills, Engineering Ethics and Human Values, Communication skills and Management courses.

ii. **Basic Science Courses (BSC)** include Mathematics, Physics, Chemistry, Biology, etc.

iii. **Engineering Science Courses (ESC)** include Engineering practices, Engineering Graphics, Basics of Electrical / Electronics / Mechanical / Computer Engineering, Instrumentation etc.

iv. **Professional Core Courses (PCC)** include the core courses relevant to the chosen specialization/branch.

v. **Professional Elective Courses (PEC)** include the elective courses relevant to the chosen specialization/ branch.

vi. **Open Elective Courses (OEC)** shall provide opportunity to study a course from any discipline that includes the courses relevant to chosen specialization, the courses that enhances soft and managerial skills courses a student can choose from the curriculum of other B.E. / B. Tech. / B. Arch. programmes and courses offered by the Departments under the Faculty of Science and Humanities.

vii. **Employability Enhancement Courses (EEC)** include Project Work and/or Internship, Career Development Skills, Creative and Innovative Project, Seminar, Professional Practices, Case Study and Industrial/Practical Training.

viii. **Mandatory Courses (MC)** exposes to Environment Sciences, Indian Constitution, Essence of Indian Traditional Knowledge and Induction Programme, whose scores will have no bearing on their final credits.

II. B.E. (Honours)

A Student can opt for **B.E (Honours)** at the end of the fourth semester of B.E programme subject to the conditions prescribed by the Syndicate from time to time. In addition to the requirements specified for the B.E regulations, the B.E. (Honours) students must earn a minimum of 20 additional credits through online courses/Professional Elective Courses category and should not have obtained "SA", "RA" grade in any of the courses.

III. Mandatory Three Week Induction Programme

The students are expected to undergo a mandatory three week induction programme comprising of physical activity, creative arts, universal human values, proficiency modules, lectures by eminent people, visits to local areas and familiarization to department/branch & innovations immediately after admission.

IV. **Number of courses per semester**

Curriculum of a semester shall normally have a blend of 4 to 6 lecture courses including Mandatory Courses except the pre-final and final semesters and laboratory courses not exceeding 2. In addition, Employability Enhancement Course(s) may also be included. Each course may have credits assigned as per table given below:

Contact period per week	Credits
1 Lecture Period / 1 Tutorial Period	1
2 Practical Periods (Laboratory / Seminar / Project Work / etc.)	1

However, the total number of courses per semester shall not exceed 10 (including EEC & MC). Pre-final semester may have 4 to 6 lecture courses, Project work Phase I / Project 1 and laboratory courses not exceeding 2. Final semester may have blend of 2 or 3 lecture courses and Project work Phase II / Project 2.

V. **ASSESSMENT PROCEDURES FOR AWARDING MARKS**

All B.E./B.Tech. Programmes consist of Theory Courses, Laboratory Courses and Employability Enhancement Courses. Employability Enhancement Courses include Project Work, Seminar, Professional Practices, Case Study and Industrial/Practical Training. Appearance in End Semester Examination is mandatory for all courses including Theory, Laboratory and Project work.

(i.e.) Each course shall be evaluated for a maximum of 100 marks as shown below:

S.No	Category of course	Continuous Assessments	End-Semester Examinations
i.	Theory Courses	60 Marks	40 Marks
ii.	Laboratory Courses	75 Marks	25 Marks
iii.	Project Work	60 Marks	40 Marks
iv.	All other EEC Courses	100 Marks	-

VI. **ASSESSMENT FOR THEORY COURSES:**

For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 60 and the End Semester Examination carries 40 marks.

The University examinations (End Semester Exams) for theory courses will be of 3 hours duration and shall normally be conducted between October and December during the odd semesters and between April and June during the even semesters. End semester Examination is mandatory requirement for passing the course and every student should appear for the examination for theory, laboratory courses and project work.

Continuous Assessment comprises of two assessments of equal weightage, conducted by the course instructor / coordinator / department. There shall be take home assignments / case study / tutorial / quizzes apart from conducting two tests with appropriate weightages as given below:

Description of Assessment I	Weightage	Description of Assessment II	Weightage
Test 1	75%	Test 2	75%
assignments / case study / tutorial / quizzes/presentations	25%	assignments / case study / tutorial / quizzes/ presentations	25%

VII. PASSING REQUIREMENTS

- The passing requirement for a student in a course is determined based on the conditions mentioned below.

  (i) The passing minimum, putting together the continuous assessment and end semester examination, is as follows:

Description	Passing minimum
2/3 of class average is less than 40%	40%
2/3 of class average is between 40% and 50%, inclusive of both	2/3 of class average
2/3 of class average is greater than 50%	50%

AND

  (ii) The student must have obtained at-least 40% in the end semester examination, provided the course has an end semester examination.

- If a student fails to secure a pass in a theory course (except electives), the student shall do reappearance registration only along with regular students for that course in the subsequent semester, when offered next and attend the end semester examination, provided the student has obtained at-least 50% in the continuous assessment, and did not have shortage of attendance. Others have to earn continuous assessment and attend the End semester examination. Optionally, the student might also register for the course again, earn attendance and continuous assessment marks and write the end semester examination.
- If the course, in which the student has failed, is a professional elective or an open elective, the student may be permitted to register for the **same** or **any other** professional elective or open elective course in the subsequent semesters. In case of registering for a different course, the student has to attend the classes and fulfill the attendance requirements. In case if the same course, the student has the option of registering for the course again or doing reappearance alone, i.e. writing the end semester examination alone, provided the student has earned at-least 50% in the continuous assessment.
- If a student has failed in the VIII semester examination, he/she may be allowed to register for the course in the subsequent semester itself.

VIII. AWARD OF LETTER GRADES

The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

Letter Grade	Grade Points
O (Outstanding)	**10**
A + (Excellent)	**9**
A (Very Good)	**8**
B + (Good)	**7**
B (Average)	**6**
RA (Reappearance Registration)	**0**
SA (Shortage of Attendance)	**0**
W (Withdrawal)	**0**

'RA' denotes Reappearance registration is required for that particular course.

'SA' denotes shortage of attendance and hence prevented from writing end semester examination.

'W' indicates withdrawal from the course.

The range of marks for each grade is decided based on the passing minimum defined in passing requirements. If 'y' is the passing minimum, then the grade range is defined as:

Grade Range (G) = ceil of $\frac{100 - y}{5}$

Range	Grade
< y	RA
y to y + G-1	B
y+G to y+2G-1	B+
y+2G to y+3G-1	A
y+3G to y+4G-1	A+
y+4G to min (y+5G-1, 100)	O

IX. BREAK OF STUDY FROM A PROGRAMME

- A student is permitted to go on break of study for a fixed period of one year as a single break in the entire course of study.
- From the III to VIII semesters, the student is permitted to go on break of study. A student is not permitted to go on break of study in the first year.

X. ADDITIONAL POINTS

- Total number of Credits to be between **160 -165 for UG Programmes**
- If a student has shortage of attendance in all the registered courses, he/she would not be permitted to move to higher semester and has to repeat the current semester in the subsequent year.
- There is no weightage for Mandatory Courses and these course performances would not be considered for computing CGPA. However, passing of mandatory courses is a must.
- **Classification of degree - Honours**
  A student who has earned the required credits for the degree and also earned 20 additional credits through online courses / additional PEC's within the prescribed period and passed all the subjects in first attempt and also fulfilled the condition given in First Class with Distinction is classified as **"passed the degree with Honours".**
- There is no change in the Attendance requirements.
- If internship followed by the report is part of a Curriculum, no Professional Elective can be dropped in lieu of Internship. However, if internship is not part of the curriculum and the student undergoes during vacations and submits report for valuation, a Professional Elective can be dropped in lieu of internship.

Off: 2235 8808

FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING
ANNA UNIVERSITY
CHENNAI – 600 025

Mobile : 9444116623
E-mail: shanthiap@gmail.com

Dr. A.P. SHANTHI
Chairperson

Lr.No 003/SSC /FICE/2018

To All HoDs 10/12/18

10.12.2018

To
The Director
Centre for Academic Courses
Anna University, Chennai – 600 025.

Dear Sir,

Sub: Anna University – FICE – Inclusion of the Problem Solving and Python Programming in the R 2019 curriculum– reg.

*****

It has been decided to rename the course "Programming for Problem Solving", as "**Problem Solving and Python Programming**", and the course Computer Practices lab as "**Problem Solving and Python Programming Laboratory**", in the R 2019 curriculum. This can be incorporated in the I semester or the II semester curriculum. The Heads of the Departments are requested to incorporate this change in their respective curriculum. The syllabi for these two courses will be provided shortly.

Yours faithfully,

10/12/18

CHAIRPERSON, ICE

Copy to :

1. The Chairperson Faculty of Civil Engg./ Mechanical Engg., / Electrical Engg., / Science and Humanities /Technology, Anna University, Chennai -25.
2. The All Heads offering UG Programmes at CEG/ACT/MIT campuses

6031

DEPARTMENT OF INSTRUMENATION ENGINEERING
MADRAS INSTITUTE OF TECHNOLOGY
ANNA UNIVERSITY :: CHROMEPET

Minutes of the Fourth Curriculum and Syllabus Revision Meeting (C&S R-2019) for UG & PG, held on 20.12.2018 at 09.30 AM in the KVN Seminar Hall, Dept. of IE.

Members Present:

Sl.No	Name	Designation
1.	Dr. J. Prakash	Professor & Head
2.	Dr.P.Kanagasabapathy	Visiting Professor
3.	Dr. N. Pappa	Professor
4.	Dr.K.Latha	Professor
5.	Dr. D. Vasanthi	Associate Professor

Minutes:

- Dr. J.Prakash presented the Educational objective, programme outcomes of R2015
- He requested the faculty members to give their suggestions to update the Programme Educational Objectives, Programme Outcomes, Programme Specific Outcomes and Course Outcomes.
- Based on the suggestions given by the faculty members the following are the PEOs, POs and PSOs:

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) :	Bachelor of Electronics and Instrumentation Engineering curriculum is designed to prepare the graduates to acquire knowledge, skills and attitudes in order to: 1. Be successful in their technical, professional careers & in their chosen fields such as Electronics, Instrumentation, Process Control & Information Technology. 2. Engross in the life long process of learning to keep themselves abreast of new developments in the emerging areas of Electronics, Instrumentation, Process Control & Information Technology. 3. Start their own company or nurture innovative ideas and creativity in their work place. 4. Uphold the highest integrity and social responsibility in all their endeavors. 5. Exhibit leadership and inter-personal skills.
PROGRAMME OUTCOMES (POs):	The graduates will have the ability to 1. Apply the Mathematical knowledge and the basics of Science and Engineering to solve the problems pertaining to Electronics and Instrumentation Engineering. 2. Identify and formulate Instrumentation Engineering problems from

	research literature and be able to analyze the problem using first principles of Mathematics and Engineering Sciences. 3. Come out with solutions for the complex problems and to design system components or process that fulfill the particular needs taking into account public health and safety and the social, cultural and environmental issues. 4. Draw well-founded conclusions applying the knowledge acquired from research and research methods including design of experiments, analysis and interpretation of data and synthesis of information and to arrive at significant conclusion. 5. Form, select and apply relevant techniques, resources and Engineering and IT tools for Engineering activities like electronic prototyping, modeling and control of systems/processes and also being conscious of the limitations. 6. Understand the role and responsibility of the Professional Instrumentation Engineer and to assess societal, health, safety issues based on the reasoning received from the contextual knowledge. 7. Be aware of the impact of professional Engineering solutions in societal and environmental contexts and exhibit the knowledge and the need for sustainable Development. 8. Apply the principles of Professional Ethics to adhere to the norms of the engineering practice and to discharge ethical responsibilities. 9. Function actively and efficiently as an individual or a member/leader of different teams and multidisciplinary projects. 10. Communicate efficiently the engineering facts with a wide range of engineering community and others, to understand and prepare reports and design documents; to make effective presentations and to frame and follow instructions. 11. Demonstrate the acquisition of the body of engineering knowledge and insight and Management Principles and to apply them as member / leader in teams and multidisciplinary environments. 12. Recognize the need for self and life-long learning, keeping pace with technological challenges in the broadest sense.
PROGRAM SPECIFIC OUTCOMES (PSOs):	After completion of Electronics and Instrumentation Engineering program, students will gain core competency skills in domains such as Electronics, Instrumentation and Process control and 1. Be able to Select, install, calibrate and maintain instruments used for measurement and analysis and interpret the data obtained to arrive at a significant conclusion. 2. Be able to analyze, design and develop signal conditioning circuits for sensors, actuators and select a suitable Embedded System for realizing various control schemes and smart instruments. 3. Be able to design, develop and implement control schemes for various industrial processes and gain hands on experience in configuring Industrial Automation System such as PLC and DCS.

Dr.D.Vasanthi
UG Coordinator
C&S R-2019

20/12/2018
Dr.N.Pappa
PG Coordinator
C&S R-2019

Dr. J.Prakash
Prof. & Head, IE

SEMESTER I

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
		Technical English I	HSMC	4	0	0	4	4
		Mathematics I	BSC	3	1	0	4	4
		Engineering Physics	BSC	3	0	0	3	3
		Engineering Chemistry	BSC	3	0	0	3	3
		Engineering Graphics	ESC	1	0	4	5	3
PRACTICALS								
		Basic Sciences Laboratory	BSC	0	0	4	4	2
		Workshop Practices Laboratory	ESC	0	0	4	4	2
			TOTAL	**14**	**1**	**12**	**27**	**21**

SEMESTER II

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
		Technical English II	HSMC	4	0	0	4	4
		Mathematics II	BSC	3	1	0	4	4
		Problem Solving and Python Programming	ESC	3	0	0	3	3
		Basics of Electrical Engineering	ESC	3	0	0	3	3
		Engineering Mechanics	ESC	3	1	0	4	4
		Materials Science	BSC	3	0	0	3	3
PRACTICALS								
		Problem Solving and Python Programming Laboratory	ESC	0	0	4	4	2
		Electrical Machines Laboratory	ESC	0	0	4	4	2
			TOTAL	**19**	**2**	**8**	**29**	**25**

SEMESTER III

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Mathematics III	BSC	3	1	0	4	4
2.	SK	Analysis of Electric Circuits	PCC	3	0	0	3	3
3.		Thermodynamics and Fluid Mechanics	ESC	3	0	0	3	3
4.	SSM	Electronics for Analog Signal Processing- I	PCC	3	0	0	3	3
5.	SRK	Signals and Systems	PCC	3	0	0	3	3
6.		Humanities – 1	HSMC	3	0	0	3	3
PRACTICALS								
7.	SRK	Electronics for Analog Signal Processing Laboratory	PCC	0	0	4	4	2
8.	SSM	Circuit Simulation Laboratory	PCC	0	0	4	4	2
			TOTAL	**18**	**1**	**8**	**27**	**23**

SEMESTER IV

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
01		Management	HSMC	3	0	0	3	3
02		Environmental Sciences	MC	3	0	0	3	0
03	SK	Instrument Transducers	PCC	3	0	0	3	3
04	SSM	Electronics for Analog Signal Processing- II	PCC	3	0	0	3	3
05	DK	Electrical and Electronic Measurements	PCC	3	0	0	3	3
06	DK	Digital System Design	PCC	3	0	0	3	3
PRACTICALS								
07	DK/SSM	Sensors and Signal Conditioning Laboratory	PCC	0	0	4	4	2
08	CS	Digital System Design Laboratory	PCC	0	0	4	4	2
			TOTAL	**18**	**0**	**8**	**28**	**19**

SEMESTER V

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
		Humanities – II	HSMC	3	0	0	3	3
		Indian Constitution, Essence of Indian Knowledge Tradition	MC	3	0	0	3	0
	DV	Control System Analysis and Design	PCC	3	0	0	3	3
	MM	Industrial Instrumentation - I	PCC	3	0	0	3	3
	KL	Embedded System Design	PCC	3	0	0	3	3
		Professional Elective - I	PEC	3	0	0	3	3
PRACTICALS								
	DV/SS	Control and Instrumentation Laboratory	PCC	0	0	4	4	2
	KL/SM	Embedded System Design Laboratory	PCC	0	0	4	4	2
		Summer Internship / Summer Project (Minimum 4 Weeks)	EEC	0	0	0		2
			TOTAL	**18**	**0**	**8**	**26**	**21**

SEMESTER VI

S. NO.	CODE NO.	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	NP	Process Control	PCC	3	0	0	3	3
2.	SS	Industrial Instrumentation - II	PCC	3	0	0	3	3
3.	SRK	Discrete Time Signal Processing	PCC	3	0	0	3	3
4.		Professional Elective - II	PEC	3	0	0	3	3
5.		Professional Elective - III	PEC	3	0	0	3	3
6.		Open Elective - I	OEC	3	0	0		3
PRACTICALS								
7.	NP	Instrumentation System Design Laboratory	PCC	0	0	4	4	2
8.	DM	Process Control and Instrumentation Laboratory	PCC	0	0	4	4	2
			TOTAL	**18**	**0**	**8**	**23**	**22**

SEMESTER VII

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
	KL	Industrial Automation Systems	PCC	3	0	0	3	3
	NP	Process Data Analytics	PCC	3	0	0	3	3
	SRK	Industrial Data Communication	PCC	3	0	0	3	3
		Professional Elective - IV	PEC	3	0	0	3	3
		Professional Elective - V	PEC	3	0	0	3	3
		Open Elective - II	OEC	3	0	0		3
PRACTICALS								
	MM	Industrial Automation Laboratory	PCC	0	0	4	4	2
		Project 1/Phase I	EEC	0	0	6		3
			TOTAL	**18**	**0**	**10**	**19**	**23**

SEMESTER VIII

S. NO.	CODE NO.	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
		Professional Elective- VI	PEC	3	0	0	3	3
		Professional Elective - VII	PEC	3	0	0	3	3
PRACTICALS								
		Project 2/ Phase II	EEC	0	0	16		8
			TOTAL	**6**		**16**	**6**	**14**

Open Elective

TOTAL	66	

PROFESSIONAL ELECTIVE COURSE (PEC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
	PEC	Professional Elective-I	3	0	0	3	V
	PEC	Professional Elective-II	3	0	0	3	VI
	PEC	Professional Elective-III	3	0	0	3	VI
	PEC	Professional Elective-IV	3	0	0	3	VII
	PEC	Professional Elective-V	3	0	0	3	VII
	PEC	Professional Elective-VI	3	0	0	3	VIII
	PEC	Professional Elective-VII	3	0	0	3	VIII
					TOTAL	21	

OPEN ELECTIVE COURSES (OEC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
	OEC	Open Elective-I	3	0	0	3	VI
	OEC	Open Elective-II	3	0	0	3	VII
					TOTAL	6	

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
	EEC	Summer Internship / Summer Project (Minimum 4 Weeks)	0	0	0	2	V
	EEC	Project 1/Phase I	0	0	6	3	VII
	EEC	Project 2/ Phase II	0	0	16	8	VIII
					TOTAL	13	

MANDATORY COURSES (MC)

S.NO.	CODE NO.	COURSE TITLE	PERIODS PER WEEK			CREDITS	Semester
			Lecture	Tutorial	Period		
	MC	Environmental Sciences	3	0	0	0	IV
	MC	Indian Constitution, Essence of Indian Knowledge Tradition	3	0	0	0	V
					TOTAL	0	

1. Summary

Subject Area	Credits per Semester								Credits Total	Guidelines
	I	II	III	IV	V	VI	VII	VIII		
HSMC	4		3	3	3				13	17*
BSC	12	7	4						23	20-23*
ESC	5	14	3						22	21*
PCC			13	16	13	13	12		66	62-64*
PEC					3	6	6	6	21	21*
OEC						3	3		6	6*
EEC					2		3	8	13	13*
Non-Credit /(Mandatory)				0	0				0	0
								TOTAL	164	160-165*

Professional Electives(PE)

S.NO.	COURSE CODE	COURSE TITLE	CATAGORY	CONTACT PERIODS	L	T	P	C
1.	DM	Analytical Instrumentation	PE	3	3	0	0	3
2.	KK	Biomedical Instrumentation	PE	3	3	0	0	3
3.	KK	Fiber optics and laser Instrumentation	PE	3	3	0	0	3
4.	DM	safety instrumented System	PE	3	3	0	0	3
5.	SS	Instrumentation standards	PE	3	3	0	0	3
6.	SSM	Modern Control Theory	PE	3	3	0	0	3
7.	DV	Advanced topics in PID control	PE	3	3	0	0	3
8.	JP	Model predictive control	PE	3	3	0	0	3
9.	JP	Fault detection and diagnosis	PE	3	3	0	0	3
10.	SK	Power electronics, drives and control	PE	3	3	0	0	3
11.	KK	Fundamentals of Nano science and MEMS	PE	3	3	0	0	3

EMT

12.	**CS**	Microcontroller based system design	PE	3	3	0	0	3
13.	**CS**	Introduction to Image and Video Analytics	PE	3	3	0	0	3
14.	**SRK**	Principles of Communication Engineering	PE	3	3	0	0	3
15.	**SRK**	Discrete Time Signal Processing	PE	3	0	0	3	3
16.	**MM**	Introduction to Industrial Process, Measurement and Control	PE	3	3	0	0	3
17.	**JP**	Cyber Security for Industrial Automation	PE	3	3	0	0	3
18.	**JP**	Cyber Physical Systems	PE	3	3	0	0	3
19.	**JP**	Control Valves	PE	3	3	0	0	3
20.	**JP**	Internet of Things and Applications	PE	3	3	0	0	3
ELECTIVES FROM OTHER DEPARTMENT								
21.		VLSI Design	PE	3	3	0	0	3
22.		Principles of Digital Image Processing	PE	3	3	0	0	3
23.		Mixed Signal IC Design	PE	3	3	0	0	3
24.		Electromagnetic Interference and Compatibility	PE	3	3	0	0	3
25.		Metrology & Measurement Systems	PE	3	3	0	0	3
26.		Automotive Electrical & Electronic Systems	PE	3	3	0	0	3
27.		Vehicle Control System	PE	3	3	0	0	3
28.		Hybrid and Electric Vehicles	PE	3	3	0	0	3
29.		Automotive automation	PE	3	3	0	0	3
30.		Automotive test instrumentation	PE	3	3	0	0	3
31.		Aircraft system and Instruments	PE	3	3	0	0	3
32.		Avionics	PE	3	3	0	0	3
33.		Statistical Quality Control and Reliability Engineering	PE	3	3	0	0	3

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

CONTENTS

Humanities, Social Science including Management Courses (HSMC)

MINUTES
SYLLABU
COMMITT

MIT Ex2
Minutes
SSC Meeting

FACULTY OF ELECTRICAL ENGINEERING
ANNA UNIVERSITY, CHENNAI

Minutes of the Syllabus Sub Committee Meeting

Minutes of the Syllabus Sub Committee meeting of the B.E *Electronics and Instrumentation Engineering* degree programme under R - 2019, Faculty of Electrical Engineering offered at University Departments was held on 22.12.2018 at 10 .00 AM at DCF, PG Hall, MIT Campus, Anna University, Chennai.

The following members were present:

1.	B.UMAMAHESWARI	22/12/18
2.	S.VIJAYARAGHAVAN	S. Vijayaraghavan
3.	JAYAHARAN C.J.	C.J Jayaharan
4.	PARAMESWARAN	S Parameswaran
5.	M.UMAPATHY	M. Umapathy
6.	K. LATHA	22/12/18
7.	S.Srinivasan	22/12/18
8.	VISHNU VARADAN	
9.	HARSHINE VARUNA V	V Harshine
10.	J. Prakash	
11.	T.THYAGARAJAN	22/12/18
12.		
13.		
14.		

SPECIAL INVITEES

1. The Director, Centre for Academic Courses, AU, Ch-25
2. The Additional Director / Deputy Director, Centre for Academic Courses, Anna University, Chennai - 25

The Chairperson, Faculty of Electrical Engineering welcomed the members and presented the salient points of Regulations R - 2019 to be followed for the programmes offered at University Departments under CBCS from the academic year 2019 - 2020.

The members were requested to offer their suggestions to the Head of the Departments.

The Head of the Department made the presentation of details of the Curriculum and Syllabi and requested the members to discuss and finalize the curricula and syllabi of B.E.. programmes.

After detailed discussions, the draft version of the Curriculum and Syllabi of B.E. programmes was finalized.

22/12/18
Chairperson
Faculty of Electrical Engg.
Anna University,
Chennai-25.

HoD

Members

Members

C. J. Jayaharan 22/12/18
Members

S. Paramasivam
Members

Members

22/12/18
Members

22/12/18
Members

22/12/18

V Harish 22/12/18

22/12/18
Members

ACCEPTANCE FOR SUBJECT

eptance Letter

Date: 22.12.2018

From
Dr. K. Latha
Professor,
Department of Instrumentation Engineering,
MIT Campus,
Anna University,
Chennai-44

To
The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.
Ref: Lr. No. 1/AU/SSC/CBCS/FE/2018, Dated: 29.11.18

*****

With reference to the above, I hereby accept / ~~regret to accept~~ to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : lat_padhu@yahoo.com
2. Mobile no. : 9500064042

Thanking you,

Yours faithfully,

Dr. K. LATHA, M.E.,Ph.D.,
Professor
Dept. of Instrumentation Engineering
MIT Campus, Anna University
Chromepet, Chennai - 600 044

Acceptance Letter

Date: 22.12.2018

From
Dr.V.Natarajan
Professor,
Department of Instrumentation Engineering,
MIT Campus,
Anna University,
Chennai-44

To
The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044..

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.

Ref: Lr. No. 1/AU/SSC/CBCS/FE/2018, Dated: 29.11.18

*****

With reference to the above, I hereby accept / ~~regret to accept~~ to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : natraj@mitindia.edu
2. Mobile no. : 9445193536

Thanking you,

Yours faithfully,

Dr. V. NATARAJAN, Ph.D.
Professor
Department of Instrumentation Engg.
MIT Campus, Anna University,
Chromepet, Chennai - 600 044

Acceptance Letter

Date: 22.12.2018

From

Dr.T.Thyagarajan,
Professor,
Department of Instrumentation Engineering,
MIT Campus,
Anna University,
Chennai-44

To

The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044.

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.

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With reference to the above, I hereby accept / ~~regret~~ to accept to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : thyagu_vel@yahoo.co.in
2. Mobile no. : 9444104850

Thanking you,

Yours faithfully,

22/12/18

Acceptance Letter

Date: 22.12.2018

From
Dr. S. Srinivasan
Professor,
Department of Instrumentation Engineering,
MIT Campus,
Anna University,
Chennai-44

To
The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.
Ref: Lr. No. 1/AU/SSC/CBCS/FE/2018, Dated: 29.11.18

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With reference to the above, I hereby accept / ~~regret to accept~~ to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : srini@mitindia.edu
2. Mobile no. : 9382882300

Thanking you,

Yours faithfully,

Acceptance Letter

Date: 22.12.2018

From

Dr.J.Prakash,
Professor,
Department of Instrumentation Engineering,
MIT Campus,
Anna University,
Chennai-44

To

The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044.

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.

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With reference to the above, I hereby accept / ~~regret to accept~~ to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : prakaiit@gmail.com
2. Mobile no. : 944860188

Thanking you,

Yours faithfully,

22/12/18

Dr. J. PRAKASH, Ph.D.,
Professor,
Department of Instrumentation Engineering,
MIT Campus, Anna University,
Chromepet, Chennai - 600 044.

Acceptance Letter

Date: 22.12.2018

From

Mr.C.J.Jayaharan
Senior Manager,
Automation Process,
M/s Ramco Systems Limited,
Chennai-600 113

To

The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.

Ref: Lr. No. 1/AU/SSC/CBCS/FE/2018, Dated: 29.11.18

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With reference to the above, I hereby accept / ~~regret to accept~~ to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : jayaharancj@gmail.com
2. Mobile no. : 9884264212

Thanking you,

Yours faithfully,

C. J. Jayaharan
22/12/18

Acceptance Letter

Date: 22.12.2018

From

Mr.S.Parameswaran
Senior Analyst Engineering,
M/s Caterpillar India Private Limited,
Chennai-600 113

To

The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.

Ref: Lr. No. 1/AU/SSC/CBCS/FE/2018, Dated: 29.11.18

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With reference to the above, I hereby accept / ~~regret to accept~~ to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : paramesh282@gmail.com
2. Mobile no. : 91 76074752

Thanking you,

Yours faithfully,

S. Parameswaran

Acceptance Letter

Date: 22.12.2018

From

Ms. Harshine Varuna
B.E. (E&I) - FINAL YEAR STUDENT,
Department of Instrumentation Engineering,
MIT Campus,
Anna University,
Chennai-44

To

The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.

Ref: Lr. No. 1/AU/SSC/CBCS/FE/2018, Dated: 29.11.18

*****

With reference to the above, I hereby accept / ~~regret to accept~~ to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : harshine2007@gmail.com
2. Mobile no. : 9941016698

Thanking you,

Yours faithfully,

V. Harshine

Acceptance Letter

Date: 22.12.2018

From

Mr. Vishnu Varadhan
B.E. (E&I) - FINAL YEAR STUDENT,
Department of Instrumentation Engineering,
MIT Campus,
Anna University,
Chennai-44

To

The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.

Ref: Lr. No. 1/AU/SSC/CBCS/FE/2018, Dated: 29.11.18

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With reference to the above, I hereby accept / ~~regret to accept~~ to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : ultramicroscopic2012@gmail.com
2. Mobile no. : 9940622798

Thanking you,

Yours faithfully,

Acceptance Letter

Date: 22.12.2018

From

Dr. M. Umapathy
Professor,
Department of Instrumentation & Control Engineering,
NIT Trichy,
Trichy-620 015

To

The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.

Ref: Lr. No. 1/AU/SSC/CBCS/FE/2018, Dated: 29.11.18

*****

With reference to the above, I hereby accept / ~~regret to accept*~~ to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : umapathy@nitt.edu
2. Mobile no. : 9443013136

Thanking you,

Yours faithfully,

Acceptance Letter

Date: 22.12.2018

From
Mr.S.Vijayaraghavan
Automation Consultant,
Raja annamalaipuram,
Chennai-28

To
The Head of the Department
Department of Instrumentation Engineering,
Anna University,
Chennai – 600 044

Dear Sir / Madam,

Sub: Anna University, Chennai – University Department - Membership in the Syllabus Sub Committee in the Faculty of Electrical Engineering - Acceptance – Reg.
Ref: Lr. No. 1/AU/SSC/CBCS/FE/2018, Dated: 29.11.18

*****

With reference to the above, I hereby accept / ~~regret to accept~~ to serve as a member in the Syllabus Sub Committee Meeting which is scheduled on 22.12.2018 in the Faculty of Electrical Engineering , Anna University, Chennai - 600 025.

My e-mail id and mobile phone number are as follows:

1. E-mail id : vijayrag.viji@gmail.com
2. Mobile no. : 9444494795

Thanking you,

Yours faithfully,

DEPARTMENT OF INSTRUMENTATION ENGINEERING
M.I.T. CAMPUS: ANNA UNIVERSITY

Syllabus Sub Committee **Date: 22/12/2018**

S.NO	STAFF NAME	DESIGNATION	SIGNATURE
1.	Dr. D. VASANTHI	Asso. professor	
2.	D. Manamalli	Professor	
3.	S. Sutha	Asst. Professor	
4	S. Kumar	Asso. Prof	
5.	S. MEYAPPAN	Asst. Professor	
6.	A. GANESH RAM	Asst. Professor	
7.	M. VIJAYAKARTHICK	Asst. Professor	
8.	N. V JNOTH	Asst prof	
9	C. Shanthi	Asst. Professor	
10.	N. PAPPA	Professor	
11.	M. Mythily	Asst Professor	
12.	D. KALPANA	Asst. Professor	22/12/2018
13	SABITHA RAMAKRISHNAN	Assoc. Professor	22/12/2018

DEPARTMENT OF INSTRUMENTATION ENGINEERING
MIT CAMPUS:: CHENNAI 600 044.

ATTENDANCE SHEET

FACULTY MEETING

DATE: 31.01.2019 UG / PG Syllabus meeting TIME: 01.30 P.M.

Sl. No.	Name of the Faculty	Signature
1.	D. Manamalli	
2.	C. Shanthi	
3.	J. Praveen	
4.	D. Vasanthi	
5.	N. PAPPA	
6.	D. KALPANA	
7.	K. LATHA	
8.	M. Mythily	
9	Sabitha Ramakrishnan	
10	S. Srinivasan	

B.E ELECTRONICS AND INSTRUMENTATION ENGINEERING

R2015			R2019				
Semester	**Subject**	**Credit**	**Semester**	**Subject**	**Credit**	**Updated Yes/No**	**% (similarity)**
III	Electronics for Analog Signal Processing I	4	II	Electronics for Analog Signal Processing- I	3	Yes	90
III	Electronics for Analog Signal Processing Laboratory	2	II	Analog Signal Processing Laboratory	2	Yes	95
II	Analysis of Electric Circuits	3	III	Analysis of Electric Circuits	3	No	100
III	Electrical Machines	3	III	Electrical Machines	3	Yes	98
II	Signals and Systems	3	III	Signals and Systems	3	Yes	80
II	Circuit Simulation Laboratory	2	III	Circuit Simulation Laboratory	2	No	100
III	Electrical Machines Laboratory	2	III	Electrical Machines Laboratory	2	No	100
IV	Electronics for Analog Signal Processing II	4	IV	Electronics for Analog Signal Processing- II	3	Yes	98
IV	Digital Principles and Applications	3	IV	Digital System Design	4	Yes	92
III	Instrument Transducers	4	IV	Instrument Transducers	3	Yes	99
III	Electrical and Electronic Measurements	3	IV	Electrical and Electronic Measurements	3	Yes	92
IV	Sensors and Signal Conditioning Circuits Laboratory	2	IV	Sensors and Signal Conditioning Circuits Laboratory	2	Yes	80 75
VI	Discrete Time Signal Processing	4	V	Discrete Time Signal Processing	3	Yes	55
IV	Industrial Instrumentation I	3	V	Industrial Instrumentation - I	3	Yes	78
V	Control Systems	4	V	Control System Analysis and Design	3	Yes	90

V	Microprocessors, Microcontrollers and Applications	3	V	Embedded System Design Laboratory	3	Theory cum lab	0
	Microprocessor and Interfacing Laboratory	2					
VI	Industrial Instrumentation Laboratory	2	V	Control and Instrumentation Laboratory	2	Yes	25
Elective	Power Electronics, Drives and Control	3	VI	Power Electronics, Drives and Control	3	No	100
V	Industrial Instrumentation II	3	VI	Industrial Instrumentation - II	3	Yes	55
VI	Process Control	4	VI	Process Control	3	Yes	96
VI	Process Control Laboratory	2	VI	Process Control and Instrumentation Laboratory	2	Yes	80
VII	Industrial Automation Laboratory	2	VI	Industrial Automation Systems Laboratory	3	Theory cum lab	0
Elective	Industrial Data Communication	3	VII	Industrial Data Communication	3	Yes (moved from PE to PC)	85
Elective	Introduction to Process Data Analytics	3	VII	Introduction to Process Data Analytics	3	(moved from PE to PC)	100
Elective	Introduction to Industrial Processes, Measurement and Control	3	VII	Introduction to Industrial Processes, Measurement and Control	3	moved from OE to PC	100
VII	Instrumentation System Design Laboratory	2	VII	Instrumentation System Design Laboratory	2	Yes	85
Elective	Analytical Instrumentation	3	Elective	Analytical Instrumentation	3	No	100
Elective	Biomedical Instrumentation	3	Elective	Biomedical Instrumentation	3	Yes	98
Elective	Fiber optics and Laser Instrumentation	3	Elective	Fiber optics and Laser Instrumentation	3	Yes	99
Elective	Safety Instrumented System	3	Elective	Safety Instrumented System	3	No	100

Elective	Instrumentation Standards	3	Elective	Instrumentation Standards	3	No	100
Elective	Fundamentals of Nano Science and MEMS	3	Elective	Fundamentals of Nano Science and MEMS	3	Yes	40
			Elective	Modern Control Theory	3	Newly included	
Elective	Advanced Topics in PID Control	3	Elective	Advanced Topics in PID Control	3	No	100
Elective	Model Predictive Control	3	Elective	Model Predictive Control	3	No	100
Elective	Fault Detection and Diagnosis	3	Elective	Fault Detection and Diagnosis	3	No	100
			Elective	Cyber Security for Industrial Automation	3	Newly included	
			Elective	Cyber Physical Systems	3	Newly included	
			Elective	Control Valves	3	Newly included	
			Elective	Machine Learning	3	Newly included	
Elective	Microcontroller Based System Design	3	Elective	Microcontroller Based System Design	3	No	~~100~~ 20
			Elective	Introduction to Image and Video Processing	3	Newly included	
			Elective	Principles of Communication Engineering	3	Newly included	
			Elective	Industrial Internet of Things	3	Newly included	
			Elective	Digital VLSI	3	Newly included	
			Elective	Mixed Signal IC Design	3	Newly included	
			Elective	Electromagnetic Interference and Compatibility	3	Newly included	

			Elective	Metrology and Measurements	3	Newly included	
			Elective	Automotive Electrical and Electronics Systems	3	Newly included	
			Elective	Vehicle Control Systems	3	Newly included	
			Elective	Electric and Hybrid Vehicles	3	Newly included	
			Elective	Automotive Instrumentation and Testing	3	Newly included	
			Elective	Aircraft Systems Engineering	3	Newly included	
			Elective	Avionics Systems	3	Newly included	
			Elective	Robotic Technology	3	Newly included	
			Elective	Database Management Systems	3	Newly included	
			Elective	Computer Networks	3	Newly included	
			Elective	Computer Architecture	3	Newly included	
			Elective	Programming and Data Structures	3	Newly included	

SIGNATURE OF HOD

To
Dr. D.V
for file
11/4/19

ANNA UNIVERSITY: CHENNAI -25
27th BOARD OF STUDIES
UNIVERSITY DEPARTMENT
2019 - 2022
FACULTY OF ELECTRICAL ENGINEERING

DATE: 28.03.2019 TIME : 10.00 A.M.

VENUE: Seminar Hall of High Voltage Engineering Building,
Anna University, Chennai.

MEMBERS FEED BACK

Mr. B. Sai Ramesh
Vice President
M/s.Technip FMC

a) Very good and fruitful discussion

b) Very good preparation and presented very well.

c) Innovative ideas

ANNA UNIVERSITY: CHENNAI -25
27th BOARD OF STUDIES
UNIVERSITY DEPARTMENT
2019 - 2022
FACULTY OF ELECTRICAL ENGINEERING

DATE: 28.03.2019 **TIME : 10.00 A.M.**

VENUE: Seminar Hall of High Voltage Engineering Building,
Anna University, Chennai.

MEMBERS FEED BACK

Dr.Saswati Mukharjee
Professor & Head
Department of Information Science and Technology
CEG Campus,

It is an enlightening and very informative meeting. The preparation and curriculum and syllabi ~~are~~ are of very high quality. The end result, at the end of all the discussions and eventual changes/ modifications, look very attractive and effective. Students will benefit immensely from the ensuing curriculum and syllabi.

28/3/19

ANNA UNIVERSITY: CHENNAI -25
27th BOARD OF STUDIES
UNIVERSITY DEPARTMENT
2019 - 2022
FACULTY OF ELECTRICAL ENGINEERING

DATE: 28.03.2019 TIME : 10.00 A.M.

VENUE: Seminar Hall of High Voltage Engineering Building,
Anna University, Chennai.

MEMBERS FEED BACK

Dr.S.Chandramohan
Head Depat. of EEE

1. Meeting was well organised
2. Chairman (i/c) made a very good Presentation on R-2019 UG & PG.
3. Healthy discussions resulted in useful outcome.

28/3/19.

(S. CHANDRAMOHAN)

ANNA UNIVERSITY: CHENNAI -25
27th BOARD OF STUDIES
UNIVERSITY DEPARTMENT
2019 - 2022
FACULTY OF ELECTRICAL ENGINEERING

DATE: 28.03.2019 **TIME : 10.00 A.M.**

VENUE: Seminar Hall of High Voltage Engineering Building,
Anna University, Chennai.

MEMBERS FEED BACK

Dr.M.Ganesh Madhan
Professor & Head
Department of Electronics Engineering
MIT Campus

A detailed and thorough discussion on the regulations, syllabus and curriculum of courses under the faculty of Electrical Engineering, was carried out.

M.Ganesh
28/3/19

ANNA UNIVERSITY: CHENNAI -25
27th BOARD OF STUDIES
UNIVERSITY DEPARTMENT
2019 - 2022
FACULTY OF ELECTRICAL ENGINEERING

DATE: 28.03.2019 TIME : 10.00 A.M.

VENUE: Seminar Hall of High Voltage Engineering Building,
Anna University, Chennai.

MEMBERS FEED BACK

Mr.V.Vijaykarthik
~~Assistant~~ Manager
Technical Institute,
GE

It was a fruitful discussion among the Committee & good take aways from the meeting. Also, feeling fruitful for delighted to have contributed for the discussion

ANNA UNIVERSITY: CHENNAI -25
27th BOARD OF STUDIES
UNIVERSITY DEPARTMENT
2019 - 2022
FACULTY OF ELECTRICAL ENGINEERING

DATE: 28.03.2019 TIME : 10.00 A.M.

VENUE: Seminar Hall of High Voltage Engineering Building,
Anna University, Chennai.

MEMBERS FEED BACK

Dr. D.Manamalli
Professor
Department of Instrumentation Engg.
MIT Campus

- The curriculum of PG & UG courses were discussed.
- Detailed deliberations were held towards the Project - 1 and Project 2.
- The detailed curriculum of EEE & EST I were discussed.
- The Comparison with AICTE and AU syllabus were clearly made.

Thanks for the opportunity given

ANNA UNIVERSITY: CHENNAI -25
27th BOARD OF STUDIES
UNIVERSITY DEPARTMENT
2019 - 2022
FACULTY OF ELECTRICAL ENGINEERING

DATE: 28.03.2019 **TIME : 10.00 A.M.**

VENUE: Seminar Hall of High Voltage Engineering Building,
Anna University, Chennai.

MEMBERS FEED BACK

Dr. P. Vanaja Ranjan
Professor,
Dept. EEE

- Suggestion of having 8th Sem as free slot for project only is welcome, since Student can move to outside Chennai for industry projects.
- Attendence + monitoring scheme has to be stated in regulation.
- Summer Internship should be encouraged for interested Students to do in parent department also so that they involve with research works even from UG level.
- QP pattern was not discussed in the BOS meeting as it was not the forum. But, as senior faculty the observation is that Q16 is doing some role of (Q11) of previous 1992, 95, 98, 2000, 2002, 2005, 2008 regulations. Q16 only added more writing work for Student in exam hall since Q11 to Q15 were not credited for value of (13) marks. There is no time for cognitive thinking. This need to be addressed in suitable forum.
- Chairman IIC Electrical achieved the work excellently.

Vanaja Ranjan

ANNA UNIVERSITY: CHENNAI -25
27th BOARD OF STUDIES
UNIVERSITY DEPARTMENT
2019 - 2022
FACULTY OF ELECTRICAL ENGINEERING

DATE: 28.03.2019 TIME : 10.00 A.M.

VENUE: Seminar Hall of High Voltage Engineering Building,
Anna University, Chennai.

MEMBERS FEED BACK

Dr. N. Pappa
Head of the Department
Department of Instment. Engg.
MIT Campus

Regulation 2019

1. Reassessment — Explicitly can be mentioned as towards end of the Sem with 100% syllabus.

Curriculum and syllabus

Two phases of project required

28/3/19