

DEPARTMENT OF INSTRUMENTATION AND CONTROL ENGINEERING

VISION

To become a world class school and centre of excellence in Instrumentation and control Engineering for Higher Level Learning, Research and Consultancy.

MISSION

- IMPART high quality education that comprehends student aspiration and potential
- CREATE passion for learning and foster innovation
- ENDORSE and nurture the talents towards serving the society

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

The Department of Instrumentation and Control Engineering has developed and maintained a well-defined set of educational objectives and desired program outcomes. Educational objectives of the program cater to the requirements of the stakeholders such as students, parents, employers, alumni, faculty members etc.

These objectives will be evident by professional visibility (publications, presentations, inventions, patents and awards), entrepreneurial activities, international activities (participation in international conferences, collaborative research and employment abroad).

The PEOs are as follows:

- PEO 1** To provide sound foundation in the mathematical, scientific and engineering fundamentals to formulate, solve and analyze problems related to Instrumentation and Control Engineering.
- PEO 2** To prepare graduates for employment in core / IT industries who are socially responsible and integrated with professional and ethical skills.
- PEO 3** To prepare graduates to involve in research, higher studies and / or to become entrepreneurs in the long run.

PROGRAMME OBJECTIVES(POs)

Graduates of Instrumentation and Control Engineering program of Sri Krishna College of Technology will have the ability to

PO1.Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

P02.Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

P03.Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

P04.Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

P05.Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

P06. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

P07. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

P08. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

P09. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

P010. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

P011. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

P012. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

A graduate of the Instrumentation and Control Engineering Program of Sri Krishna College of Technology will demonstrate:

PSO1. An understanding of electrical and electronics devices / instruments to design circuits and solve real time problems

PSO2. An ability to provide innovative control methodologies to core industrial problems.

PEO vs. MISSION MAPPING

PEOs	Mission1	Mission2	Mission3
PEO1	S	M	S
PEO2	M	S	S
PEO3	M	S	S

S	STRONG	M	MODERATE	W	WEAK
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CURRICULUM AND SYLLABI-2015 (APPLICABLE FOR STUDENTS ADMITTED IN 2015-2016)

SEMESTER I							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credits	Ext/Int	Category
1	15EN001	Technical English I	2/0/2	4	3	60/40	HUM
2	15MA101	Linear Algebra, Differential Equations and its Applications	3/1/0	4	4	60/40	BS
3	15PY102	Engineering Physics	3/0/0	3	3	60/40	BS
4	15CH103	Engineering Chemistry	3/0/0	3	3	60/40	BS
5	15CS201	Problem Solving Techniques and Computer Programming	3/0/0	3	3	60/40	ES
6	15CE203	Basic Civil and Mechanical Engineering	3/0/0	3	3	60/40	ES
7	15ME203	Engineering Graphics Laboratory	1/0/2	3	2	40/60	ES
8	15CH105	Chemistry Laboratory	0/0/2	2	1	40/60	BS
9	15CS202	Computer Programming Laboratory	0/0/2	2	1	40/60	ES
Total				27	23	900	

SEMESTER II							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	15EN002	Business Communication and Presentation Skills	3/0/1	4	4	40/60	HUM
2	15MA106	Transform Techniques and Integral Calculus	3/1/0	4	4	60/40	BS
3	15CH107	Environmental Science	3/0/0	3	3	60/40	BS
4	15PY110	Material Science	3/0/0	3	3	60/40	BS
5	15EE204	Electric Circuit Analysis	3/1/0	4	4	60/40	ES
6	15IC205	Electron Devices	3/0/0	3	3	60/40	ES
7	15ME202	Engineering Practice Laboratory	0/0/2	2	1	40/60	ES
8	15PY104	Physics Laboratory	0/0/2	2	1	40/60	BS
9	15IC206	Circuits Analysis Laboratory	0/0/2	2	1	40/60	ES
Total				27	24	900	

SEMESTER III							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	15MA131	Fourier analysis and Discrete Transforms	3/2/0	5	4	60/40	BS
2	15IC304	Electronic Circuits	3/0/0	3	3	60/40	PC
3	15IC305	Transducer Engineering	3/0/0	3	3	60/40	PC
4	15IC306	Electrical Machines	3/0/0	3	3	60/40	PC
5	15IC401	Applied Thermodynamics and Fluid Mechanics	3/0/0	3	3	60/40	PSC
6	15CS206	Objected Oriented Programming	3/0/3	6	5	40/60	ES
7	15IC307	Electrical Machines Laboratory	0/0/3	3	2	40/60	PC
8	15IC308	Transducers and Measurements Laboratory	0/0/3	3	2	40/60	PC
9	15IC8XX	Mandatory Course-I	2/0/0	2	1	100/0	MC
Total				31	26	900	

B.E: INSTRUMENTATION AND CONTROL ENGINEERING

SEMESTER IV							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	15MA146	Convergence Series and Computational Methods	3/2/0	5	4	60/40	BS
2	15IC309	Control Engineering	3/2/0	5	4	60/40	PC
3	15IC310	Digital System Design	3/2/0	5	4	60/40	PC
4	15IC311	Linear Integrated Circuits	4/0/0	4	3	60/40	PC
5	15IC312	Microprocessors and Microcontrollers	4/0/0	4	3	60/40	PC
6	15IC313	Digital and Linear Integrated Circuits Laboratory	0/0/3	3	2	40/60	PC
7	15IC314	Microprocessors and Microcontrollers Laboratory	0/0/3	3	2	40/60	PC
8	15IC8XX	Mandatory Course II	2/0/0	2	1	100/0	MC
Total				31	23	800	

SEMESTER V							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	15IC315	Industrial Instrumentation	4/0/0	4	4	60/40	PC
2	15IC316	Process Control	4/0/0	4	4	60/40	PC
3	15IC317	Embedded System Design	3/0/2	5	4	40/60	PC
4	15IC318	Digital Signal Processing for ICE	3/2/0	5	4	60/40	PC
5	15IC319	Analytical Instrumentation	3/0/0	3	3	60/40	PC
6	15XX5XX	Open Elective-I	3/0/0	3	3	60/40	PE
7	15IC320	Industrial Instrumentation Laboratory	0/0/3	3	2	40/60	PC
8	15IC321	Process Control Laboratory	0/0/3	3	2	40/60	PC
9	15IC8XX	Mandatory Course III	2/0/0	2	1	100/0	MC
Total				32	27	900	

SEMESTER VI							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	15IC322	Logic and Distributed Control System	3/2/0	5	4	60/40	PC
2	15IC323	Digital Control Systems	3/2/0	5	4	60/40	PC
3	15IC324	Industrial Data Networks	3/0/2	5	4	40/60	PC
4	15XX5XX	Open Elective-II	3/0/0	3	3	60/40	PE
5	15IC4XX	Professional Elective-I	3/0/0	3	3	60/40	PE
6	15IC4XX	Professional Elective-II	3/0/0	3	3	60/40	PE
7	15IC325	Industrial Automation Laboratory	0/0/3	3	2	40/60	PC
8	15IC326	E-CAD Laboratory	0/0/3	3	2	40/60	PC
9	15IC8XX	Mandatory Course IV	2/0/0	2	1	100/0	MC
Total				32	26	900	

SEMESTER VII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	15IC4XX	Professional Elective-III	4/0/0	4	3	60/40	PC
2	15IC4XX	Professional Elective-IV	4/0/0	4	4	60/40	PC
3	15IC4XX	Professional Elective-V	3/0/0	3	3	60/40	PE
4	15IC4XX	Professional Elective-VI	3/0/0	3	3	60/40	PE
5	15XX5XX	Open Elective-III	3/0/0	3	3	60/40	OE
6	15IC601	Project Phase I	0/0/12	12	6	40/60	PW
Total				29	22	600	

SEMESTER VIII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
3	15IC602	Project Phase II	0/0/20	20	10	40/60	PW
Total				20	10	100	

EMPLOYABILITY ENHANCEMENT SKILLS (3 credits)

S. No	Name of the Course	L/T/P	Total Contact Hours	Credits
1.	One Industrial Practice *	0/0/30	30	1
2.	One Finishing School Paper (Industry Based Syllabus)	0/0/30	30	1
3.	Employability Skills	0/0/30	30	1

* Minimum duration of 7 days is mandatory for One Industrial Practice

ELECTIVE/AUDIT COURSES

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
OPEN ELECTIVES						
1.	15IC501	PLC and SCADA	3/0/0	3	3	OE
2.	15IC502	Sensors and Transducers	3/0/0	3	3	OE
3.	15IC503	Industrial Instruments	3/0/0	3	3	OE
PROFESSIONAL ELECTIVES						
Elective Stream I - Instrumentation						
1.	15IC402	MEMS and Nano Technology	3/0/0	3	3	PE
2.	15IC403	Instrumentation System Design	3/0/0	3	3	PE
3.	15IC404	Fibre Optics and Laser Instrumentation	3/0/0	3	3	PE
4.	15IC405	Instrumentation in Petrochemical Industries	3/0/0	3	3	PE
5.	15IC406	Automobile and Aircraft Instrumentation	3/0/0	3	3	PE
6.	15IC407	Instrumentation in Food Processing	3/0/0	3	3	PE
7.	15IC408	Biomedical Instrumentation	3/0/0	3	3	PE
Elective Stream II – Control and Automation						
1.	15IC409	Intelligent Control	3/0/0	3	3	PE
2.	15IC410	Robotics and Automation	3/0/0	3	3	PE
3.	15IC411	Building Automation	3/0/0	3	3	PE
4.	15IC412	Electric Drives	3/0/0	3	3	PE
5.	15IC413	Physiological Control Systems	3/0/0	3	3	PE

6.	15IC414	Nonlinear Control Systems	3/0/0	3	3	PE
7.	15IC415	Power Plant Instrumentation and Control	3/0/0	3	3	PE
Elective Stream III - Electronics and Computers						
1.	15IC416	Basic VLSI Design	3/0/0	3	3	PE
2.	15IC417	Computer Organization	3/0/0	3	3	PE
3.	15IC418	Mobile Communication	3/0/0	3	3	PE
4.	15IC419	Computer Networks	3/0/0	3	3	PE
5.	15IC420	Industrial Internet of Things	3/0/0	3	3	PE
6.	15IC421	Image Processing	3/0/0	3	3	PE
7.	15IC422	Communication Engineering	3/0/0	3	3	PE

MANDATORY COURSES (4 credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1	15IC801	Foreign Language/Spoken Hindi	2/0/0	2	1	MC
2	15IC802	BEC Prelims / Vantage	2/0/0	2	1	MC
3	15IC803	MOOC Certification	2/0/0	2	1	MC
4	15IC804	Yoga, Ethics and Life Skills	2/0/0	2	1	MC

ONE CREDIT COURSES (Additional Credit Courses)

S.No	Course Code	Course Title	Organised by	Credits
1.	15IC901	Calibration Techniques	Roots Industries Pvt Ltd	1
2.	15IC902	PLC and DCS	Yokogawa India Pvt Ltd	1
3.	15IC903	Short term training programmes	FCRI, Palakkad	1
4.	15IC904	Motion Control Systems	AGIIT	1
5.	15IC905	Electrical Metrology	Instrumentation Limited, Palakkad	1
6..	15IC906	Online Certification Course	edX/MOOC/NPTEL/Coursera/ Spoken Tutorials	1

SCHEME OF CREDIT DISTRIBUTION - SUMMARY

S. No	Stream	Credits/Semester								Credits
		I	II	III	IV	V	VI	VII	VIII	
1.	Humanities (HS)	3	4	-	-	-	-	-	-	7
2.	Basic Sciences(BS)	11	11	4	4	-	-	-	-	30
3.	Engineering Sciences(ES)	9	9	5	-	-	-	-	-	23
4.	Professional Core(PC)	-	-	13	18	23	16	7	-	77
5.	Professional Electives(PE)	-	-	3	-	3	9	6	-	21
6.	Open Electives(OE)	-	-	-	-	-	-	3	-	3
7.	Project Work(PW)	-	-	-	-	-	-	6	10	16
8.	Mandatory Courses	-	-	1	1	1	1	-	-	4
9.	Employability Enhancement Skills	-	-	-	-	-	-	-	-	3
Total		23	24	26	23	27	26	22	10	184

CURRICULUM AND SYLLABI-2016 (APPLICABLE FOR STUDENTS ADMITTED IN 2016-2017)

SEMESTER I							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credits	Ext/Int	Category
1	16EN001	Communication skills	3/0/2	5	4	40/60	HS
2	16MA101	Linear Algebra, Calculus and its applications	3/2/0	5	4	60/40	BS
3	16CH105	Engineering Chemistry	3/0/0	3	3	60/40	BS
4	16CH003	Environmental Science	3/0/0	3	3	60/40	HS
5	16CS201	Problem Solving Techniques and C Programming	3/0/3	6	5	40/60	ES
6	16IC301	Electron Devices	3/0/0	3	3	60/40	PC
7	16ES202	Engineering Graphics Laboratory	0/0/3	3	2	40/60	ES
8	16CH106	Chemistry Laboratory	0/0/3	3	2	40/60	BS
Total				31	26	800	

SEMESTER II							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	16EN002	Technical Communication Skills	3/0/2	5	4	40/60	HS
2	16MA102	Integral Calculus and Laplace Transform	3/2/0	5	4	60/40	BS
3	16PH101	Engineering Physics	3/0/2	5	4	40/60	BS
4	16IC302	Electric Circuits and Analysis	3/1/0	4	4	60/40	PC
5	16IC303	Electronic Devices and Circuits	4/0/0	4	4	60/40	PC
6	16IC201	Workshop Laboratory	0/0/3	3	2	40/60	PC
7	16IC304	Devices and Circuits Laboratory	0/0/3	3	2	40/60	PC
Total				30	24	700	

SEMESTER III							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	16MA103	Discrete Transforms and Fourier Analysis	3/2/0	5	4	60/40	BS
2	16IC305	Digital System Design	4/0/0	4	4	60/40	PC
3	16IC306	Transducer Engineering	3/0/0	3	3	60/40	PC
4	16IC307	Linear Integrated Circuits	4/0/0	4	4	60/40	PC
5	16IC202	Thermodynamics and Fluid Mechanics	3/2/0	5	4	60/40	ES
6	16IC308	Digital and Linear Integrated Circuits Laboratory	0/0/3	3	2	40/60	PC
7	16IC309	Transducer and Measurements Laboratory	0/0/3	3	2	40/60	PC
8	16IC7XX	Mandatory Course I	2/0/0	2	1	100/0	MC
Total				29	24	800	

B.E: INSTRUMENTATION AND CONTROL ENGINEERING

SEMESTER IV							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	16MA111	Complex Analysis and Computational Methods	3/2/0	5	4	60/40	BS
2	16IC310	Control Engineering	3/0/2	5	4	60/40	PC
3	16IC311	Electrical Machines	3/0/2	5	4	60/40	PC
4	16IC203	Hydraulics and Pneumatics	4/0/0	4	4	60/40	ES
5	16IC312	Microprocessors and Microcontrollers	4/0/0	4	4	60/40	PC
6	16IC204	Fluid Power Automation Laboratory	0/0/3	3	2	40/60	ES
7	16IC313	Microprocessors and Microcontrollers Laboratory	0/0/3	3	2	40/60	PC
8	16IC7XX	Mandatory Course II	2/0/0	2	1	100/0	MC
Total				31	25	800	

SEMESTER V							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	16IC314	Industrial Instrumentation	4/0/0	4	4	60/40	PC
2	16IC315	Process Control	4/0/0	4	4	60/40	PC
3	16IC316	Embedded System Design	4/0/0	4	4	60/40	PC
4	16IC317	Applied Digital Signal Processing	3/2/0	5	4	60/40	PC
5	16IC318	Analytical Instrumentation	3/0/0	3	3	60/40	PC
6	16XX5XX	Open Elective-I	3/0/0	3	3	60/40	OE
7	16IC319	Industrial Instrumentation Laboratory	0/0/3	3	2	40/60	PC
8	16IC320	Process Control Laboratory	0/0/3	3	2	40/60	PC
9	16IC7XX	Mandatory Course III	2/0/0	2	1	100/0	MC
Total				31	27	900	

SEMESTER VI							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	16IC321	Logic and Distributed Control System	4/0/0	4	4	60/40	PC
2	16IC322	Digital Control Systems	4/0/0	4	4	60/40	PC
3	16IC323	Industrial Data Networks	3/0/0	3	3	60/40	PC
4	16XX5XX	Open Elective-II	3/0/0	3	3	60/40	OE
5	16IC4XX	Professional Elective-I	3/0/0	3	3	60/40	PE
6	16IC4XX	Professional Elective-II	3/0/0	3	3	60/40	PE
7	16IC324	Industrial Automation Laboratory	0/0/3	3	2	40/60	PC
8	16IC325	E-CAD Laboratory	0/0/3	3	2	40/60	PC
9	16IC7XX	Mandatory Course IV	2/0/0	2	1	100/0	MC
Total				28	25	900	

SEMESTER VII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	16IC4XX	Professional Elective-III	3/0/0	3	3	60/40	PE
2	16IC4XX	Professional Elective-IV	3/0/0	3	3	60/40	PE
3	16IC4XX	Professional Elective-V	3/0/0	3	3	60/40	PE
4	16IC4XX	Professional Elective-VI	3/0/0	3	3	60/40	PE
5	16XX5XX	Open Elective-III	3/0/0	3	3	60/40	OE
6	16IC601	Project Phase I	0/0/12	12	6	40/60	PW
Total				27	21	600	

SEMESTER VIII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	16IC602	Project Phase II	0/0/20	20	10	40/60	PW
Total				20	10	100	

EMPLOYABILITY ENHANCEMENT SKILLS (3 credits)

S. No	Name of the Course	L/T/P	Total Contact Hours	Credits
1.	One Industrial Practice *	0/0/30	30	1
2.	One Finishing School Paper (Industry Based Syllabus)	0/0/30	30	1
3.	Employability Skills	0/0/30	30	1

* Minimum duration of 7 days is mandatory for One Industrial Practice

ELECTIVE/AUDIT COURSES

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
OPEN ELECTIVES						
1.	16IC501	PLC and SCADA	3/0/0	3	3	OE
2.	16IC502	Sensors and Transducers	3/0/0	3	3	OE
3.	16IC503	Industrial Instruments	3/0/0	3	3	OE
PROFESSIONAL ELECTIVES						
Elective Stream I - Instrumentation						
1.	16IC401	MEMS and Nano Technology	3/0/0	3	3	PE
2.	16IC402	Instrumentation System Design	3/0/0	3	3	PE
3.	16IC403	Fibre Optics and Laser Instrumentation	3/0/0	3	3	PE
4.	16IC404	Instrumentation in Petrochemical Industries	3/0/0	3	3	PE
5.	16IC405	Automobile and Aircraft Instrumentation	3/0/0	3	3	PE
6.	16IC406	Instrumentation in Food Processing	3/0/0	3	3	PE
7.	16IC407	Biomedical Instrumentation	3/0/0	3	3	PE
Elective Stream II – Control and Automation						
1.	16IC408	Intelligent Control	3/0/0	3	3	PE
2.	16IC409	Robotics and Automation	3/0/0	3	3	PE
3.	16IC410	Building Automation	3/0/0	3	3	PE
4.	16IC411	Electric Drives	3/0/0	3	3	PE
5.	16IC412	Physiological Control Systems	3/0/0	3	3	PE

6.	16IC413	Nonlinear Control Systems	3/0/0	3	3	PE
7.	16IC414	Power Plant Instrumentation and Control	3/0/0	3	3	PE
Elective Stream III - Electronics and Computers						
8.	16IC415	Basic VLSI Design	3/0/0	3	3	PE
9.	16IC416	Computer Organization	3/0/0	3	3	PE
10.	16IC417	Mobile Communication	3/0/0	3	3	PE
11.	16IC418	Computer Networks	3/0/0	3	3	PE
12.	16IC419	Industrial Internet of Things	3/0/0	3	3	PE
13.	16IC420	Image Processing	3/0/0	3	3	PE
14.	16IC421	Communication Engineering	3/0/0	3	3	PE

MANDATORY COURSES (4 credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1	16IC701	Foreign Language/Spoken Hindi	2/0/0	2	1	MC
2	16IC702	BEC Prelims / Vantage	2/0/0	2	1	MC
3	16IC703	MOOC Certification Course	2/0/0	2	1	MC
4	16IC704	Yoga, Ethics and Life Skills	2/0/0	2	1	MC

ONE CREDIT COURSES (Additional Credit Courses)

S.No	Course Code	Course Title	Organised by	Credits
1.	16IC901	Calibration Techniques	Roots Industries Pvt Ltd	1
2.	16IC902	PLC and DCS	Yokogawa India Pvt Ltd	1
3.	16IC903	Short term training programmes	FCRI, Palakkad	1
4.	16IC904	Motion Control Systems	AGIIT	1
5.	16IC905	Electrical Metrology	Instrumentation Limited, Palakkad	1
6..	16IC906	Online Certification Course	edX/MOOC/NPTEL/Coursera / Spoken Tutorials	1

SCHEME OF CREDIT DISTRIBUTION - SUMMARY

S. No	Stream	Credits/Semester								Credits
		I	II	III	IV	V	VI	VII	VIII	
10	Humanities (HS)	7	4	-	-	-	-	-	-	11
11	Basic Sciences(BS)	9	8	4	4	-	-	-	-	25
12	Engineering Sciences(ES)	7	2	9	-	-	-	-	-	18
13	Professional Core(PC)	3	10	9	18	23	16	7	-	86
14	Professional Electives(PE)	-	-	-	-	3	9	6	-	18
15	Open Electives(OE)	-	-	-	-	-	-	3	-	3
16	Project Work(PW)	-	-	-	-	-	-	6	10	16
17	Mandatory Courses	-	-	1	1	1	1	-	-	4
18	Employability Enhancement Skills	-	-	-	-	-	-	-	-	3
Total		26	24	23	23	27	26	22	10	184

CURRICULUM AND SYLLABI-2017 (APPLICABLE FOR STUDENTS ADMITTED IN 2017-2018)

SEMESTER I							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credits	Ext/Int	Category
1	17EN001	Technical Communication Skills I	3/0/2	5	4	40/60	HS
2	17MA101	Linear Algebra And Differential Calculus	3/2/0	5	4	60/40	BS
3	17CH103	Engineering Chemistry	3/0/2	5	4	40/60	BS
4	17IC301	Electric Circuits and Analysis	3/2/0	5	4	60/40	PC
5	17CS214	Computer Programming	3/0/0	3	3	60/40	ES
6	17ME205	Engineering Graphics Laboratory	0/0/3	3	2	40/60	ES
7	17CS215	Computer Programming Laboratory	0/0/3	3	2	40/60	ES
Total				29	23	700	

SEMESTER II							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	17EN002	Technical Communication Skills II	3/0/2	5	4	40/60	HS
2	17MA104	Integral Calculus and Laplace Transforms	3/2/0	5	4	60/40	BS
3	17PH102	Engineering Physics	3/0/2	5	4	40/60	BS
4	17IC302	Electron Devices and Circuits	3/0/0	3	3	60/40	PC
5	17IC303	Electrical Measurements	3/0/0	3	3	60/40	PC
6	17IC201	Workshop Laboratory	0/0/3	3	2	40/60	ES
7	17IC304	Devices and Circuits Laboratory	0/0/3	3	2	40/60	PC
Total				27	22	700	

SEMESTER III							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	17MA106	Discrete Transforms and Fourier Analysis	3/2/0	5	4	60/40	BS
2	17IC305	Digital System Design	4/0/0	4	4	60/40	PC
3	17IC306	Transducer Engineering	3/0/0	3	3	60/40	PC
4	17IC307	Linear Integrated Circuits	4/0/0	4	4	60/40	PC
5	17IC202	Thermodynamics and Fluid Mechanics	3/2/0	5	4	60/40	ES
6	17IC308	Digital and Linear Integrated Circuits Laboratory	0/0/3	3	2	40/60	PC
7	17IC309	Transducer and Measurements Laboratory	0/0/3	3	2	40/60	PC
8	17IC7XX	Mandatory Course I	2/0/0	2	1	100/0	MC
Total				29	24	800	

SEMESTER IV							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	17MA113	Complex Analysis and Computational Methods	3/2/0	5	4	60/40	BS
2	17IC310	Control Engineering	3/0/2	5	4	60/40	PC
3	17IC311	Electrical Machines	3/0/2	5	4	60/40	PC
4	17IC203	Hydraulics and Pneumatics	4/0/0	4	4	60/40	ES
5	17IC312	Microprocessors and Microcontrollers	4/0/0	4	4	60/40	PC
6	17IC204	Fluid Power Automation Laboratory	0/0/3	3	2	40/60	ES
7	17IC313	Microprocessors and Microcontrollers Laboratory	0/0/3	3	2	40/60	PC
8	17IC7XX	Mandatory Course II	2/0/0	2	1	100/0	MC
Total				31	25	800	

SEMESTER V							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	17IC314	Industrial Instrumentation	4/0/0	4	4	60/40	PC
2	17IC315	Process Control	4/0/0	4	4	60/40	PC
3	17IC316	Embedded System Design	4/0/0	4	4	60/40	PC
4	17IC317	Applied Digital Signal Processing	3/2/0	5	4	60/40	PC
5	17IC318	Analytical Instrumentation	3/0/0	3	3	60/40	PC
6	17XX5XX	Open Elective-I	3/0/0	3	3	60/40	OE
7	17IC319	Industrial Instrumentation Laboratory	0/0/3	3	2	40/60	PC
8	17IC320	Process Control Laboratory	0/0/3	3	2	40/60	PC
9	17IC7XX	Mandatory Course III	2/0/0	2	1	100/0	MC
Total				31	27	900	

SEMESTER VI							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	17IC321	Logic and Distributed Control System	4/0/0	4	4	60/40	PC
2	17IC322	Digital Control Systems	4/0/0	4	4	60/40	PC
3	17IC323	Industrial Data Networks	3/0/0	3	3	60/40	PC
4	17XX5XX	Open Elective-II	3/0/0	3	3	60/40	OE
5	17IC4XX	Professional Elective-I	3/0/0	3	3	60/40	PE
6	17IC4XX	Professional Elective-II	3/0/0	3	3	60/40	PE
7	17IC324	Industrial Automation Laboratory	0/0/3	3	2	40/60	PC
8	17IC325	E-CAD Laboratory	0/0/3	3	2	40/60	PC
9	17IC7XX	Mandatory Course IV	2/0/0	2	1	100/0	MC
Total				28	25	900	

SEMESTER VII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	17IC4XX	Professional Elective-III	3/0/0	3	3	60/40	PE
2	17IC4XX	Professional Elective-IV	3/0/0	3	3	60/40	PE
3	17IC4XX	Professional Elective-V	3/0/0	3	3	60/40	PE
4	17IC4XX	Professional Elective-VI	3/0/0	3	3	60/40	PE
5	17XX5XX	Open Elective-III	3/0/0	3	3	60/40	OE
6	17IC601	Project Phase I	0/0/12	12	6	40/60	PW
Total				27	21	600	

SEMESTER VIII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
3	17IC602	Project Phase II	0/0/20	20	10	40/60	PW
Total				20	10	100	

EMPLOYABILITY ENHANCEMENT SKILLS (3 credits)

S. No	Name of the Course	L/T/P	Total Contact Hours	Credits
1.	One Industrial Practice *	0/0/30	30	1
2.	One Finishing School Paper (Industry Based Syllabus)	0/0/30	30	1
3.	One Certification Programme	0/0/30	30	1

* Minimum duration of 7 days is mandatory for One Industrial Practice

ELECTIVE/AUDIT COURSES

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
OPEN ELECTIVES						
4.	17IC501	PLC and SCADA	3/0/0	3	3	OE
5.	17IC502	Sensors and Transducers	3/0/0	3	3	OE
6.	17IC503	Industrial Instruments	3/0/0	3	3	OE
PROFESSIONAL ELECTIVES						
Elective Stream I - Instrumentation						
8.	17IC401	MEMS and Nano Technology	3/0/0	3	3	PE
9.	17IC402	Instrumentation System Design	3/0/0	3	3	PE
10.	17IC403	Fibre Optics and Laser Instrumentation	3/0/0	3	3	PE
11.	17IC404	Instrumentation in Petrochemical Industries	3/0/0	3	3	PE
12.	17IC405	Automobile and Aircraft Instrumentation	3/0/0	3	3	PE
13.	17IC406	Instrumentation in Food Processing	3/0/0	3	3	PE
14.	17IC407	Biomedical Instrumentation	3/0/0	3	3	PE
Elective Stream II - Control and Automation						
8.	17IC408	Intelligent Control	3/0/0	3	3	PE
9.	17IC409	Robotics and Automation	3/0/0	3	3	PE
10.	17IC410	Building Automation	3/0/0	3	3	PE
11.	17IC411	Electric Drives	3/0/0	3	3	PE
12.	17IC412	Physiological Control Systems	3/0/0	3	3	PE

13.	17IC413	Nonlinear Control Systems	3/0/0	3	3	PE
14.	17IC414	Power Plant Instrumentation and Control	3/0/0	3	3	PE
Elective Stream III - Electronics and Computers						
15.	17IC415	Basic VLSI Design	3/0/0	3	3	PE
16.	17IC416	Computer Organization	3/0/0	3	3	PE
17.	17IC417	Mobile Communication	3/0/0	3	3	PE
18.	17IC418	Computer Networks	3/0/0	3	3	PE
19.	17IC419	Industrial Internet of Things	3/0/0	3	3	PE
20.	17IC420	Image Processing	3/0/0	3	3	PE
21.	17IC421	Communication Engineering	3/0/0	3	3	PE

MANDATORY COURSES (4 credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1	17IC701	Foreign Language/Spoken Hindi	2/0/0	2	1	MC
2	17CH701	Environmental Science	2/0/0	2	1	MC
3	17IC702	MOOC Certification	2/0/0	2	1	MC
4	17IC703	Yoga, Ethics and Life Skills	2/0/0	2	1	MC

ONE CREDIT COURSES (Additional Credit Courses)

S.No	Course Code	Course Title	Organised by	Credits
1.	17IC901	Calibration Techniques	Roots Industries Pvt Ltd	1
2.	17IC902	PLC and DCS	Yokogawa India Pvt Ltd	1
3.	17IC903	Short term training programmes	FCRI, Palakkad	1
4.	17IC904	Motion Control Systems	AGIIT	1
5.	17IC905	Electrical Metrology	Instrumentation Limited, Palakkad	1
6..	17IC906	Online Certification Course	edX/MOOC/NPTEL/Coursera / Spoken Tutorials	1

SCHEME OF CREDIT DISTRIBUTION - SUMMARY

S. No	Stream	Credits/Semester								Credits	%	AICTE %
		I	II	III	IV	V	VI	VII	VIII			
1.	Humanities (HS)	4	4	-	-	-	-	-	-	8	4.4	5-10
2.	Basic Sciences(BS)	8	8	4	4	-	-	-	-	24	13.3	15-20
3.	Engineering Sciences(ES)	7	2	4	6	-	-	-	-	19	10.55	15-20
4.	Program Core(PC)	4	8	15	14	23	15	-	-	79	43.88	30-40
5.	Program Electives(PE)	-	-	-	-	-	6	12	-	18	10	10-15
6.	Open Electives(OE)	-	-	-	-	3	3	3	-	9	5	5-10
7.	Project Work(PW)	-	-	-	-	-	-	6	10	16	8.8	10-15
8.	Mandatory Course	-	-	1	1	1	1	-	-	4	2.2	-
9.	Employability Skills	-	-	-	-	-	-	-	-	3	1.66	-
Total			23	22	24	25	27	25	21	180	-	-