

Department of Aeronautical Engineering

AY: 2016-17

Date: 15.07.2017

	Action taken report -Teacher Feedback											
S.No	Analysis	Action taken report										
1.	Contact hours (L T P C) need to be corrected and verified for all courses.	Contact hours (L T P C) are corrected and verified for all courses										
2.	The following list of courses can be introduced as electives: • Heat Transfer Vibrations and Assumptionity	Heat Transfer and Space Mechanics courses are introduced as electives										
	 Vibrations and Aero elasticity Rocketry and Space Mechanics 	core course.										
3.	Aircraft Design Project I and II can be combined as 'Aircraft Design Project' and total credit needs to be increased.	Aircraft Design Project I and II is combined as 'Aircraft Design'										
4.	 The following list of elective courses needs to be rearranged appropriately: Experimental Methods in Fluid Mechanics Industrial and Experimental Aerodynamics Wind Tunnel Techniques 	Professional elective courses are rearranged appropriately										
5.	'Control Engineering' and 'Avionics' courses can be combined as one course.	Will be considered in the next revision of Curriculum & Syllabi										
6.	'Aircraft Systems and Instruments' course in 5 th semester can be shifted to lower semester.											
7.	Materials Science' course can be removed and important topics from 'Materials Science' to be added in 'Aerospace Materials and Processes' course.											
8.	Aircraft Design course has to be included as core.	Aircraft Design course is included as core										
9.	The following topics can be removed from 'Basics of Aeronautics' course in 1 st semester: Stresses and strains-Hooke's law- stress-strain diagrams - elastic constants-Factor of Safety.	The following topics are removed from 'Basics of Aeronautics' course in 1 st semester: Stresses and strains-Hooke's law- stress-strain diagrams - elastic constants-Factor of Safety.										

Prepared By,

BoS Coordinator

Approved By,

BoS Chairman

Proof for Action Taken: 2 Heat Transfer and Space Mechanics courses are introduced as electives & Vibrations and Aero elasticity is offered as core course.

Course Code	Course Title	Course	Course	L	T	P	J	С
		category	Mode					
U17AEE0001	Experimental Aerodynamics	Elective	Theory	3	0	0	0	3
U17AEE0002	Viscous Flow Theory	Elective	Theory	3	0	0	0	3
U17AEE0003	Hypersonic Aerodynamics	Elective	Theory	3	0	0	0	3
U17AEE0004	Cryogenic Engineering	Elective	Theory	3	0	0	0	3
U17AEE0005	Principles of Combustion	Elective	Theory	3	0	0	0	3
U17AEE0006	Heat and Mass Transfer	Elective	Theory 7	<mark>3</mark>	<mark>0</mark>	0	<mark>0</mark>	<mark>3</mark>
U17AEE0007	Composite Materials and Structures	Elective	Theory	3	0	0	0	3
U17AEE0008	Theory of Elasticity	Elective	Theory	3	0	0	0	3
U17AEE0009	Fatigue and Fracture Mechanics	Elective	Theory	3	0	0	0	3
U17AEE0010	Experimental Stress Analysis	Elective	Theory	3	0	0	0	3
U17AEE0011	Space Mechanics	Elective	Theory	<mark>3</mark>	<mark>0</mark>	<mark>0</mark>	<mark>0</mark>	<mark>3</mark>
U17AEE0012	Non Destructive Testing	Elective	Theory	3	0	0	0	3

PROFESSIONAL ELECTIVES

S.No	Course code	Course Title	Course Mode	СТ	L	Т	Р	J	С	Pre-requisite
1	U17AET6001	Flight Dynamics	Theory	PC	3	0	0	0	3	U17AEI4201
2	U17AET6002	Finite Element Method	Theory	PC	3	0	0	0	3	U17AET4003
<mark>3</mark>	U17AET6003	Vibrations and Aeroelasticity	Theory	PC	<mark>3</mark>	<mark>0</mark>	<mark>0</mark>	<mark>0</mark>	<mark>3</mark>	U17AEI5202
4	U17AET6104	Rocket Propulsion	Theory	PC	2	1	0	0	3	U17AEI5205
5	OE II	Open Elective II	Theory	OE	3	0	0	0	3	
6	U17AEE00	Professional Elective I	Theory	PE	3	0	0	0	3	
7	U17AEP6505	Design and Simulation Laboratory	Lab	РС	0	0	2	0	1	U17AET5003
			Embedded-							
8	U17INI6600	Engineering Clinic 4	Practical &	ES	0	0	4	2	3	
			Project							
	22									
Total Contact Hours/week									26	

Proof for Action Taken:

3 Aircraft Design Project I and II is combined as 'Aircraft Design'

8 Aircraft Design course is included as core

	Semester VII													
S.No	Course code	Course Title	Course Mode	СТ	L	Т	Р	J	С	Pre-requisite				
1	U17AEI7201	Aircraft Design	Embedded- Theory & Lab	PC	2	0	2	<mark>0</mark>	<mark>3</mark>	U17AET6001				
2	U17AEI7202	Aircraft Maintenance Practices	Embedded- Theory & Lab	PC	2	0	2	0	3	U17AEI5204				
3	U17AEI7203	Avionics	Embedded- Theory & Lab	PC	2	0	2	0	3	U17EEI3202				
4	U17AET7004	Aviation Logistics and Supply Chain Management	Theory	PC	3	0	0	0	3					
5	U17AEE00	Professional Elective II	Theory	PE	3	0	0	0	3					
6	U17AEE00	Professional Elective III	Theory	PE	3	0	0	0	3					
7	U17AEE00	Professional Elective IV	Theory	PE	3	0	0	0	3					
8	U17AEP7705	Project Work – Phase I	Project	PW	0	0	0	6	3					
	24													
			Tot	al Conta	ct H	our	s/w	eek	30					

Proof for Action Taken: 9 The following topics are removed from 'Basics of Aeronautics' course in 1st semester: Stresses and strains-Hooke's law- stress-strain diagrams - elastic constants-Factor of Safety.

U17AET1001

BASICS OF AERONAUTICS



Course Outcomes

After successful completion of this course, the students should be able to

CO1: Identify the challenges faced from the dawn of aviation to the present.

CO2: Understand the principle behind the flight of the aircraft.

CO3: Describe all the parts in the aircraft and assess their functions.

CO4: Apply Newton's laws and comprehend the physics behind Propulsion and Aerodynamics.

CO5: Understand the significance of structural design and the material used in aircrafts.

CO6: Explain the working of Rockets and space flights.

CO/PO Mapping (S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak COs Programme Outcomes(POs) PO1 PO2 PO3 PO4 PO9 PO10 PO11 PO12 PO5 PO6 PO7 PO8 CO1 S W CO2 Μ CO3 S Μ CO4 S CO5 S Μ CO6 М

Pre-requisites : NIL

Course Assessment methods

Direct

1. Continuous Assessment Test I. II

- 2. Open book test; Cooperative learning report, Assignment; Journal paper review, Group Presentation, Project report, Poster preparation, Prototype or Product Demonstration etc (as applicable)
- 3. End Semester Examination

Indirect

1. Course-end survey

HISTORY OF FLIGHT

Balloon flight - Ornithopters - Early Airplanes by Wright Brothers, biplanes and monoplanes, Developments in aerodynamics, materials, structures and propulsion over the years.

AIRCRAFT CONFIGURATIONS AND ITS CONTROLS

10 Hours

8 Hours

Different types of flight vehicles, classifications- Components of an airplane and their functions- Conventional control, powered control- Basic instruments for flying- Typical systems for control actuation.

BASICS OF AERODYNAMICS

Physical properties and structures of the atmosphere, Temperature, pressure and altitude relationships, Newton's law of motions applied to Aeronautics- Evolution of lift, drag and moment. Airfoils, Mach number, Maneuvers.

BASICS OF PROPULSION

Basic ideas about piston, turboprop and jet engines – use of propeller and jets for thrust production- Comparative merits, Principle of operation of rocket, types of rocket and typical applications, Exploration into space.

BASICS OF AIRCRAFT STRUCTURES

General types of construction, Monocoque, semi-monocoque and geodesic constructions, typical wing and fuselage structure. Metallic and non-metallic materials. Use of Aluminium alloy, titanium, stainless steel and composite materials.

Theory: 45	Tutorial: 0	Practical: 0	Project: 0	Total: 45 Hours
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REFERENCES

- 1. Anderson, J.D., "Introduction to Flight", Seventh Edition, McGraw-Hill, 2013.
- 2. Kermode, A.C. "Flight without Formulae", Pearson Education; Fifth edition, 2004.
- 3. George P. Sutton and Oscar Biblarz, "Rocket Propulsion Elements", Seventh Edition, John Wiley and Sons, New York, 2001.
- 4. Jack D. Mattingly, "Elements of Propulsion: Gas Turbines and Rockets", AIAA, 2006.
- 5. Stephen.A. Brandt, Introduction to Aeronautics: A design perspective, Second edition, AIAA Education Series, 2004.

9 Hours

9 Hours

9 Hours



DEPARTMENT OF BIOTECHNOLOGY

Action Taken Report - "Faculty Feedback" Academic Year 2016-2017

Date: 15-Jul 2017

S.No	Suggestions	Action Taken						
1.	Bioprocess Simulation Lab can be	Lab course removed in the U17						
	removed and provided as a separate	and U18 curriculum; Included as a						
	skill development lab due to excess part of Bioprocess Engineering a							
	credit constraints	Downstream Processing subject						
2.	Subjects can be oriented with the	All topics covered in the GATE and						
	competitive exam	CSIR are a part of all subject						

repared by **BOS** Coordinator

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Approved by Chairman BOS

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************	NORDOGEGG ENGINEEDING	-	-			
U17B116202	BIOPROCESS ENGINEERING	3	0	2	0	

Course Objectives:

• To apply and analysis the various chemical engineering principles for production of biological products using various bioreactor.

Course Outcomes (COs):

After successful completion of this course, the students should be able to

- CO1: Apply the knowledge of various optimization methods to design the media for fermentation broth
- **CO2** Evaluate the sterilization kinetics of media and able to design the holding time for batch sterilization
- **CO3:** Develop a suitable mathematical models for batch, fed-batch and continuous fermentation and able to simulate and evaluate the constants for microbial fermentation
- **CO4:** Understand and analyse the application of various bioreactors and importance of mass transfer effect in bioprocess engineering
- CO5: Apply the various scale-up criteria to design the bioreactors
- CO6: Identify and provide the solution for non-ideal performance of bioreactor

Pre-requisite Course:

1. U17BTT3003 Bioprocess Calculation; U17BTT4001 – Fluid and Particle mechanics in Bioprocess

	CO/PO Mapping													
	(S/M/W indicates strength of correlation)													
	S-Strong, M-Medium, W-Weak													
COs		Programme Outcomes(POs)												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	S	s		S	s					М				S
CO2	s	S		s	М					М				s
CO3	s	s		s	М					М				S
CO4	s	s		s	S		М			М				S
CO5	s	s		s	s					М				s
CO6	s	s		s	S					М				S

Course Assessment methods:

lirect
1. Continuous Assessment Test
2. Assignment
3. End Semester Examination



Course Content

MEDIA AND ITS OPTIMIZATION METHODS

9 Hour

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Criteria for good medium; Various carbon, nitrogen, minerals, vitamins and other complex nutrients for fermentation industry; Simple and complex media for microbial, plant and animal cells; oxygen requirements; medium formulation for optimal growth and product formation; Stoichiometric analysis of media . Medium optimization methods: Plackett-Burman design, simplex design and response-surface methodology. Case study: Enzyme production using Plackett-Burman design.

STERILIZATION KINETICS

9 Hour

Thermal death kinetics of microorganisms; batch and continuous heat sterilization of liquid media; filter sterilization of liquid media; sterilization of air; design of sterilization equipment for batch and continuous process.

FERMENTATION KINETICS

9 Hour

Modes of operation – batch, fed-batch and continuous cultivation, Simple unstructured kinetic models for microbial growth - Monod model; Growth of filamentous organisms and yeast. Product formation kinetics; Leudeking-Piret models, substrate and product inhibition on cell growth and product formation.

TRANSPORT PHENOMENA IN BIOREACTOR AND TYPES OF BIOREACTOR 9 Hour

Aeration and agitation in gas-liquid mass transfer, Oxygen transfer rate (OTR), determination of K_{La} , Factor affecting in OTR in bioreactor, Mass transfer correlation in Oxygen transfer. Types and industrial applications of bioreactors; Stirred-tank reactor and its ancillaries; Bubble-column reactor; Packed-bed reactor; Fluidized-bed; Air-lift reactor; and Photobioreactor.

Case study: alagal cultivation

SCALE-UP OF BIOREACTORS AND NON-IDEAL REACTOR

9 Hour

30 Hour

Scale-up criteria for bioreactors; Major factors involved in scale-up; Scaling-up of mixing systems: Scale-up of aeration/agitation regimes in stirred tank reactors. Introduction to non- ideal reactors: Residence time distribution (RTD), Reasons for non-ideality in reactors, RTD function and measurement, RTD in plug flow and mixed flow reactor.

List of Experiments

- Medium optimization by Plackett-Burman design/response surface methodology (RSM) using design expert software
- 2. Batch sterilization design
- 3. Determination of specific growth rate for production of bacterial cells
- 4. Estimation of KLa power correlation / sulfite oxidation / dynamic gassing method
- 5. Production of microbial metabolites (enzymes / antibiotics) in bioreactor
- 6. Production of biofertilizers / biopesticides / mushroom
- 7 Residence Time Distribution (RTD) studies to find non-ideality of a fermenter
- 8. Introduction to SuperPro Designer Material and Energy balance
- 9. Unit Operations, Component Library and registration, Pure and stock mixtures in Super pro
- 10. Production of monoclonal antibodies in Super pro
- Theory: 45 hour Tutorial: 0 hour Practical: 30 hour Project: 0 hour Total Hour: 75





Department of Civil Engineering

AY: 2016-17

15.07.2017

Action taken report -Faculty Feedback

S.No	Analysis	
1.	Highway and Traffic Engineering could be given as a core course.	Action taken report Implemented as a core course in R17 curriculum (U17CEI4202/ Highway and Traffic
2.	Need to introduce one credit courses and open elective courses.	Open elective courses are introduced in R15
3.	IoT and Python programming can be introduced.	Python programming is included as a project with
4.	Civil Engineering application software has to be introduced	U17INI3600/Engineering Clinics -I Lab course on application software is included and Engineering Clinics is reoriented towards
5.	Audit Courses can be introduced in PG Curriculum	Implemented the Audit course in Second semester of Next PG Curriculum

Prepared by,

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BoS Coordinator

Approved by,

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BoS Chairman

PROOF FOR 1&3

Semester III												
S.No	Course code	Course Title	Course Mode	СТ	L	Т	Р	J	С	requisite		
1	U17MAT3101	Partial Differential Equations and Transforms	Theory	BS	3	1	0	0	4	Nil		
2	U17CEI3201	Solid Mechanics	Embedded - Theory & Lab	ES	2	1	2	0	4	Nil		
3	U17CEI3202	Surveying & Geomatics	Embedded - Theory & Lab	РС	3	0	2	0	4	Nil		
4	U17CEI3203	Fluid Mechanics	Embedded - Theory & Lab	ES	2	1	2	0	4	Nil		
5	U17CET3004	Building Construction and Services	Theory	РС	3	0	0	0	3	Nil		
6	U17INI3600	Engineering Clinic 1	1 Practical & Example 1 Project		0	0	4	2	3	Nil		
	dits	22										
			1	otal C	ontac	t Hou	rs/w	eek	28			

Semester IV												
S.No	Course code	Course Title	Course Mode	СТ	L	Т	Р	J	С	requisite		
1	U17MAT4101	Numerical Methods and Probability	Theory	BS	3	1	0	0	4	Nil		
2	U17CEI4201	Applied Hydraulics and Hydraulic Machinery	Embedded - Theory & Lab	РС	3	0	2	0	4	U17CEI 3203		
3	U17CEI4202	Highway and Traffic Engineering	Embedded - Theory & Lab	PC	3	0	2	0	4	Nil		
4	U17CEI4203	Soil Mechanics	Embedded - Theory & Lab	РС	3	0	2	0	4	Nil		
5	U17CET4004	Mechanics of Materials	Theory	РС	3	0	0	0	3	U17CEI3 201		
6	U17INI4600	Engineering Clinics -II	Practical & Project	ES	0	0	4	2	3	Nil		
Total Credits 22												
			1	fotal C	ontac	t Hou	ırs/w	eek	28			

10.	U15GHP401 Professional Values	HS	1	1	0	0	1
	TOTAL	30				23	

SEMESTER –V

PROOF FOR 5

	Course Code	Course Title	Category	Contact	Hrs	/Week	&Cre	dits
				Hours	L	Т	Р	С
Theo	ory							
1.	U15CET501	Structural Analysis I	PC	4	2	2	0	3
2.	U15CET502	Design of Masonry and Reinforced Concrete Elements	PC	4	2	2	0	3
3.	U15CET503	Irrigation Engineering	PC	3	3	0	0	3
4.	U15CET504	Geotechnical Engineering I	РС	3	3	0	0	3
5.	U15CET505	Highway & Railway Engineering	PC	3	3	0	0	3
<mark>6.</mark>	OE - I	Open Elective I	OE	3	<mark>3</mark>	0	0	<mark>3</mark>
Prac	tical					1		
7.	U15CEP501	Soil Mechanics Laboratory	PC	3	0	0	3	1
8.	U15CEP502	Concrete & Highway Laboratory	PC	3	0	0	3	1
9.	U15CEP503	Survey Camp [*]	EEC	0	0	0	0	1
10.	U15GHP501	Social Values	HS	1	1	0	0	1
	•	TOTAL		27				22

*10 days survey camp during the previous summer vacation.

SEMESTER –VI

	Course Code	Course Title	Category	Contact	Hrs	/Week	&Cre	edits
				Hours		1		
					\mathbf{L}	Т	Р	С
Theo	ory							
1.	U15CET601	Structural Analysis II	PC	4	2	2	0	3
2.	U15CET602	Design of Reinforced	PC	4	2	2	0	3
		Concrete Structures						
3.	U15CET603	Geotechnical Engineering II	PC	3	3	0	0	3
4.	U15CET604	Design of Steel Structures	PC	4	2	2	0	3
5.	U15CET605	Water Supply & Waste Water	PC	3	3	0	0	3
		Engineering						
6.	OE - II	Open Elective II	OE	3	3	0	0	3

Signature of the Chairman BOS/Civil Engineering

List of Mandatory Audit Courses									Semester Offered
S.No	Course	Course Title	Course	L	Т	Р	J	С	
	code		Mode						
1	P18SEA0001	Disaster Management	Audit	3	0	0	0	0	2

	List of Electives J									
S.No	Course code	Course Title	Course Mode	L	Т	Р	J	С		
1	P18INT0001	Research Methodology and Statistics	Theory	3	0	0	0	3		
2	P18SEE0001	Design of Bridges	Theory	3	0	0	0	3		
3	P18SEE0002	Design of Pre-Stressed Concrete Elements	Theory	3	0	0	0	3	P18SEI1202	
4	P18SEE0003	Earthquake Resistant Design of Structures	Theory	3	0	0	0	3	P18SEI2202	
5	P18SEE0004	Smart Materials for Construction	Theory	3	0	0	0	3		
6	P18SEE0005	Structural Health Monitoring	Theory	3	0	0	0	3		
7	P18SEE0006	Experimental Methods and Model Analysis	Theory	3	0	0	0	3		
8	P18SEE0007	Design of Plates, Shells and Spatial Structures	Theory	3	0	0	0	3		
9	P18SEE0008	Design of Structures for Dynamic Loads	Theory	3	0	0	0	3	P18SEI2202	

PROOF FOR 4





Department of Electrical and Electronics Engineering

AY: 2016-17

date: 14-07-2017

Action taken report -Teachers Feedback

S.No	Analysis	Action taken report
1.	Industry based one credit courses to be included	One credit course on Automotive Electronics conducted by M/s. TVS Electronics is incorporated.
2.	Domain based elective could be included in the curriculum to update the knowledge in-detail in relevant field.	In R2015 regulation electives are grouped based on domainexpertise.
3	Introduce new lab courses with hands on training in latest technologies.	In R2015 regulation new labs are included Analog Electronics Lab Power and Energy lab
4	Introduce new courses related to product design and communication skills.	 Product design and development Creative Project Presentation

PreparedBy, Dr,K.Premalatha

BoS Coordinator

Approved By,

Dr.RaniThottungal

BoS Chairman

Proof for Action Taken : 1 - One credit course on Automotive Electronics is incorporated.

	OPEN ELECTIVES (OE)											
s.	Course	Course Course Title Category	Category Conta		itle Category Contact		Course Title Category		ct Hrs / Wee			eek & lits
INO.	Code		Hours	L	Т	Р	С					
Theor	Y											
1.	U15EEOE01	Renewable Energy Resources	OE	3	3	0	0	3				
2.	U15EEOE02	Control Engineering	OE	3	3	0	0	3				
3.	U15EEOE03	Industrial Electronics	OE	3	3	0	0	3				
4.	U15EEOE04	Power Electronics and Drives	OE	3	3	0	0	3				
5.	U15EEOE05	Electrical Safety and Energy management	OE	3	3	0	0	3				

ONE CREDIT COURSES

Code No.	Course Title	Industry that will offer the course
U15EEIN01	Electrical Systems in Automobile	Dept. of Automobile, KCT
U15EEIN02	Civil Construction for Power System	Dept. of Civil, KCT & TNEB
U15EIIN02	DCS Fundamentals And Industrial Communication Protocol	Dept. E & I, KCT, YOKOGAWA India Ltd.,
U15EEIN03	Siemens Course	Dept. E & I, KCT
U15EEIN04	Emerging Technologies in Solid State Drives	M/s Versa Drives, CBE
U15EEIN05	Automotive Electronics	TVS Motor Company, Hosur.

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Proof for Action Taken : 2 - In R2015 regulation electives are grouped based on domain expertise.

		PROFESSIONAL EI	LECTIVE	S (PE)						
S.	Course Code	Course Title	Category	Contact	Hı	rs / V Cre	Veel edits	x &		
No.				Hours	L	Т	Р	С		
	•	Power System	1							
1.	U15EEPE01	High Voltage Engineering	PE	3	3	0	0	3		
2.	U15EEPE02	Power Plant Engineering	PE	3	3	0	0	3		
3.	U15EEPE03	Power System Operation and Control	PE	3	3	0	0	3		
4.	U15EEPE04	Power Quality	PE	3	3	0	0	3		
5.	U15EEPE05	Restructured Power System	PE	3	3	0	0	3		
	•	Power Electron	ics							
6.	U15EEPE06	Energy Storage Technology	PE	3	3	0	0	3		
7.	U15EEPE07	Power Electronics For Renewable Energy Systems	PE	3	3	0	0	3		
8.	U15EEPE08	Switched Mode Power Conversion	PE	3	3	0	0	3		
9.	U15EEPE09	Advanced Power Electronics	PE	3	3	0	0	3		
10.	U15EEPE10	PWM converters and Applications	PE	3	3	0	0	3		
		Control System	<u>ns</u>							
11.	U15EEPE11	Adaptive Control	PE	3	3	0	0	3		
12.	U15EEPE12	Modern Optimization Techniques	PE	3	3	0	0	3		
13.	U15EEPE13	Modern Control Systems	PE	3	3	0	0	3		
14.	U15EEPE14	Non linear Control systems	PE	3	3	0	0	3		
15.	U15EEPE15	Soft computing	PE	3	3	0	0	3		
	Electrical Machines									
16.	U15EEPE16	Modeling and Analysis of Electrical Machines	PE	3	3	0	0	3		
17.	U15EEPE17	CAD of Electrical Machines	PE	3	3	0	0	3		
·		·				•	•	11		

18.	U15EEPE18	Special Electrical Machines	PE	3	3	0	0	3				
19.	U15EEPE19	Design of Energy Efficient Electrical Machines	PE	3	3	0	0	3				
20.	U15EEPE20	Automotive Electronics	PE	3	3	0	0	3				
Applied Electronics												
21.	U15EEPE21	Embedded System Design	PE	3	3	0	0	3				
22.	U15EEPE22	Digital Signal Processing	PE	3	3	0	0	3				
23.	U15EEPE23	Microcontroller Based System Design	PE	3	3	0	0	3				
24.	U15EEPE24	Low Power VLSI Design	PE	3	3	0	0	3				
25.	U15EEPE25	VLSI Design	PE	3	3	0	0	3				
		Emerging Technol	logies									
26.	U15EEPE26	FACTS	PE	3	3	0	0	3				
27.	U15EEPE27	Smart Grid Engineering	PE	3	3	0	0	3				
28.	U15EEPE28	Illumination Engineering	PE	3	3	0	0	3				
29.	U15EEPE29	HVDC	PE	3	3	0	0	3				
30.	U15EEPE30	Energy Auditing and Management	PE	3	3	0	0	3				

Proof for Action Taken : 3 - In R2015 regulation new labs are included

6.	U15MET204	Thermal Engineering and	ES	4	4	0	0	4
		Fluid Mechanics						
Pract	tical		•					
7.	U15PHP201	Physics Laboratory	BS	2	0	0	2	1
8.	1115ME 2201	Engineering Practices	ES	4	0	0	1	n
	015WIEF201	Laboratory		4	0	0	4	2
9	LUISME DOOD	Thermal Engineering and	ES	4	0	0	4	2
	013WIEF202	Fluid Mechanics Lab		4	0	0	4	2
10.	U15SIP201	Social Immersion Project	HS	2	0	0	2	2
		TOTAL		37				27

		SEMEST	ER - 3					
S.	Course	Course Title	Course Title Category Hours		Hı	rs / V Cre	Veel edits	K &
110.	Coue			nours	L	Т	Р	С
Theor	<u>ry</u>							
1.	U15MAT303	Partial Differential Equations and Transforms	BS	5	3	2	0	4
2.	U15EST001	Environmental Science and Engineering for Electrical Sciences	HS	3	3	0	0	3
3.	U15EET301	DC Machines and Transformers	PC	3	3	0	0	3
4.	U15EET302	Electromagnetic Fields	PC	3	3	0	0	3
5.	U15EET303	Networks and Systems	PC	4	2	2	0	3
6.	U15EET304	Analog Electronics	ES	3	3	0	0	3
Pract	ical				•			
7.	U15EEP301	DC Machines and Transformers Laboratory	PC	2	0	0	2	1
8.	U15EEP302	Analog Electronics Laboratory	ES	2	0	0	2	1
9.	U15GHP301	Family Values	HS	1	1	0	0	1
	Total 26 22							22

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		SEMEST	E R - 7									
S.	Course	Course Title	Category	Contact	Hrs / Week & Credits							
110.	Coue			nours	L	Т	Р	С				
Theor	Theory											
1.	U15GST006	Product Design & Development	HS	3	3	0	0	3				
2.	U15EET701	Electrical Energy Utilization and Conservation	РС	3	3 0 0 3							
3.	U15EET702	Power System Analysis	PC	4	2	2	0	3				
4.	U15EET703	Protection and Switch Gear	PC	3	3	0	0	3				
5.	U15EEPE**	Professional Elective -III	PE	3	3	0	0	3				
6.	U15	Open Elective -III	OE	3	3	0	0	3				
Pract	ical				•	•	•					
7.	U15EEP701	Power and Energy Laboratory	РС	2	0	0	2	1				
8.	U15EEP702	Project Work Phase - I	EEC	4	0	0	4	2				
9.	U15GHP701	Global Values	HS	1	1	0	0	1				
		Total		26				22				

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Proof for Action Taken : 4 – Added new courses related to product design and communication skills

		SEMEST	ER - 5						
S. No. C Theory 1. U 2. U 3. U 4. U 5. U 6. U Practica	Course Code	Course Title	Category	Contact	Hı	rs / V Cre	Veel edits	x &	
No.		Course The	Category	Hours	ours L T				
Theor	<u>ry</u>				•				
1.	U15EET501	Electrical Machine Design	PC	3	3	0	0	3	
2.	U15EET502	Power Electronics	РС	3	3	0	0	3	
3.	U15EET503	Microprocessor and Micro controller	PC	3	3	3			
4.	U15CST903	Data Structures and Algorithms	ES	3	3	0	0	3	
5.	U15EEPE**	** Professional Elective -I		3	3	0	0	3	
6.	U15	Open Elective -I	OE	3	3	0	0	3	
Pract	<u>icals</u>								
7.	U15EEP501	Power Electronics Laboratory	PC	2	0	0	2	1	
8.	U15CSP903	Data Structures and Algorithms Laboratory	ES	2	0	0	2	1	
9.	U15EEP502	Industrial Training#	EEC	-	0	0	0	1	
10.	U15ENP501	Communication Skills Laboratory	EEC	2	0	0	2	1	
11.	U15GHP501	Social Values	HS	1	1	0	0	1	
		Total		25				23	

Minimum one week training in Government / public sectors or two weeks in private organization during summer vacation at the end of fourth semester. To be evaluated during V semester by assessing the report and conducting seminar presentation.

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		SEMESTI	E R - 6								
S.	Course	Course Title	Category	Contact	Hrs / Week & Credits						
INO.	Code			Hours	L	Т	Р	С			
Theor	Theory										
1.	U15GST005	Engineering Economics and Financial Management	HS	3	3	0	0	3			
2.	U15EET601	Generation of Electrical Energy	PC	3	3	0	0	3			
3.	U15EET602	Solid State Drives	PC	4	2	2	0	3			
4.	U15EET603	Embedded Systems ES 3				0	0	3			
5.	U15EEPE**	Professional Elective -II	PE	3	3	0	0	3			
6.	U15	Open Elective -II	OE	3	3	0	0	3			
Pract	ical										
7.	U15EEP601	Electrical Drives Laboratory	PC	2	0	0	2	1			
8.	U15EEP602	Microprocessor and Embedded Systems Laboratory	ES	4	0	0	4	2			
9.	U15EEP603	Creative Project Presentation	EEC	-	0	0	0	1			
10.	U15GHP601	National Values	HS	1	1	0	0	1			
		Total		26				23			

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		SEMEST	E R - 7									
S.	Course	Course Title	Category	Contact	Hrs / Week & Credits							
	Code			Hours	L	Т	Р	С				
Theor	Theory											
1.	U15GST006	Product Design & Development	HS	3	3	0	0	3				
2.	U15EET701	Electrical Energy Utilization and Conservation	РС	3	3	0	0	3				
3.	U15EET702	Power System Analysis	4	2	2	0	3					
4.	U15EET703	Protection and Switch Gear	PC	3	3	0	0	3				
5.	U15EEPE**	Professional Elective -III	PE	3	3	0	0	3				
6.	U15	Open Elective -III	OE	3	3	0	0	3				
Pract	ical											
7.	U15EEP701	Power and Energy Laboratory	РС	2	0	0	2	1				
8.	U15EEP702	Project Work Phase - I	EEC	4	0	0	4	2				
9.	U15GHP701	Global Values	HS	1	1	0	0	1				
		Total		26				22				

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Department of Information Technology

AY: 2016-17

Date:15.07.2017

Action taken report -Teachers Feedback

S.No	Analysis	Action taken report
1.	Communication related courses like digital	U17ITE0004- Information coding Techniques
	principles, communication principles, ICT	is offered as elective
	can be given as core courses for IT stream	U17ECT3011Principles of Communication and
		U18ITI2201 Digital Logic and Microprocessor are
		offered as core course

Prepared by

BoS Coordinator

Approved by

JLA

BoS Chairman

Proof for Action Taken 1: U17ITE0004- Information coding Techniques is offered as elective

U17ECT3011Principles of Communication and U18ITI2201 Digital Logic and Microprocessor are offered as core course

	PROGRAMME ELECTIVES											
S.No	Course Code	Course Title	Course Mode	СТ	L	Τ	Р	J	C			
		Data Analyti	cs									
1. U17ITE0001 Artificial Intelligence		Artificial Intelligence	Theory	PE	3	0	0	0	3			
2.	U17ITE0002	Deep Learning	Theory	PE	3	0	0	0	3			
3. U17ITE0003 Data Visualization		Theory	PE	3	0	0	0	3				
	Cyber Security											
<mark>4.</mark>	U17ITE0004	Information Coding Techniques	Theory	PE	3	0	0	0	3			
5.	U17ITE0005	Web Application Security	Theory	PE	3	0	0	0	3			
6.	U17ITE0006	Biometric Systems	Theory	PE	3	0	0	0	3			
7.	U17ITE0007	Blockchain Technology	Theory	PE	3	0	0	0	3			
		Network and l	[oT									
8.	U17ITE0008	Adhoc and Sensor Networks	Theory	PE	3	0	0	0	3			
9.	U17ITE0009	Next Generation Networks	Theory	PE	3	0	0	0	3			
10.	U17ITE0010	Software Defined Networks	Theory	PE	3	0	0	0	3			
		Other Electiv	res									
11.	U17ITE0011	Distributed Systems	Theory	PE	3	0	0	0	3			
12.	U17ITE0012	Principles of Compiler Design	Theory	PE	3	0	0	0	3			
13.	U17ITE0013	Graphics and Multimedia	Theory	PE	3	0	0	0	3			
14.	U17MAE0101	Partial Differential Equations	Theory	BS	3	1	0	0	4			
		and Transforms										

U17ITE0004 INFORMATION CODING TECHNIQUES

COURSE OBJECTIVES:

- To understand Information properties and source coding techniques
- To acquire knowledge about error coding techniques for efficient transmission
- To understand various compression algorithms for data, Image and video

COURSE OUTCOMES:

After successful completion of this course, the students should be able to

- **CO1** Apply the suitable coding schemes for information.
- CO2 Make use of coding schemes for text compression .
- CO3 Illustrate the compression schemes for video and image.
- CO4 Utilize the various types of error control codes.
- CO5 Construct the code tree and state diagram for error control codes

Pre-requisite: Nil

											L	T	P	J	C
											3	0	0	0	3
	CO/PO Mapping														
((S/M/W	/ indica	tes str	ength	of corr	elation	n) S-S	Strong	, M-M	edium,	W-We	eak		PSC)
	Programme Outcomes(POs)														
COs	РО	PO PO							1	2	3				
	1	2	3	4	5	6	7	8	9	10	11	12			
CO1	М	М										M	Μ	ſ	
CO2	М	М										M	Μ	ſ	
CO3	М	М										M	Μ	ĺ	
CO4	М	М										M	Μ	(
CO5	М	М										Μ	Μ	[

COURSE ASSESSMENT METHODS:

Direct

- 1. Continuous Assessment Test I, II
- 2. Assignment, Group Presentation
- 3. End Semester Examination

Indirect

1. Course-end survey

THEORY COMPONENT CONTENTS

INFORMATION THEORY

Hours

Information-Entropy-Information rate-classification of codes - Kraft Mc Millanine quality-Source coding theorem-Shannon - Fano coding - Huffman coding-Extended Huffman coding - Joint and conditional entropies-Mutual information-Discrete memory less channels-BSC- BEC - Channel capacity-Shannon limit.

SOURCE CODING: TEXT, AUDIO ANDS PEECH

Text: Adaptive Huffman Coding – Arithmetic Coding – LZW algorithm–Audio: Perceptual coding-Masking techniques - Psychoacousticmodel-MEGAudiolayersI,II,III,DolbyAC3-Speech: Channel Vocoder-Linear Predictive Coding.

SOURCE CODING: IMAGE AND VIDEO

Image and Video Formats-GIF-TIFF- SIF-CIF - QCIF-Image compression: READ-JPEG - Video Compression: Principles-I, B, P frames - Motion estimation - Motion compensation -H.261 -MPEG standard.

ERROR CONTROL CODING: BLOCK CODES

Definitions and Principles: Hamming weight-Hamming distance-Minimum distance decoding –Single parity codes – Hamming codes – Repetition codes – Linear block codes - Cyclic codes - Syndrome calculation-Encoder and decoder- Cyclic Redundancy check codes.

ERROR CONTROL CODING: CONVOLUTIONAL CODES Hours

Convolutional codes-code tree-trellis-state diagram-Encoding-Decoding: Sequential search and Viterbi algorithm- Principle of Turbo coding.

REFERENCE BOOKS:

- 1. SimonHaykin,-CommunicationSystems,fourthedition,JohnWiley&Sons,2014.
- 2. Bose.R,-Information Theory, Coding And Cryptography, TMH 2011
- 3. Fred Halsall, -Multimedia Communications: Applications, Networks, Protocols And Standards, Pearson Education Asia, 2011
- 4. Sayood.K, -Introduction To Data Compression, Fourth edition, Elsevier, 2014.
- 5. Gravano. S, -Introduction To Error Control Codes, Oxford University Press, 2010.

Theory: 45	Tutorial: 0	Practical: 0	Project: 0	Total: 45 Hours
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SEMESTER – II										Pre-requisite
S.No	Course Code	Course Title	Course Mode	СТ	L	Т	Р	J	С	
1	U18MAI2201	Advanced Calculus	Embedded	BS	3	0	2	0	4	U18MAI1201
		and Laplace	- Theory							
		Transforms	& Lab							

9 Hours

9 Hours

9 Hours

2	U18PHI2201	Engineering Physics	Embedded	BS	3	0	2	0	4	-
			- Theory							
			& Lab							
3	U18CSI2201		Embedded	ES	2	0	2	0	3	U18CSI1201
		PythonProgramming	- Theory							
			& Lab							
4	U18ITI2201	Digital Logic and	Embedded	PC	<mark>3</mark>	<mark>0</mark>	2	0	4	U18EEI1201
		Microprocessor	- Theory							
			<mark>& Lab</mark>							
5	U18ENI2201	Fundamentals of	Embedded	HS	2	0	2	0	3	U18ENI1201
		Communication II	- Theory							
			& Lab							
6	U18INI2600	Engineering Clinic	Embedded	ES	0	0	4	2	3	-
		II	- Lab&							
			Project							
Total Credits									21	
Total Periods per week									29	

SEMESTER – III										Pre-
S.No	Course Code	Course Title	Course Mode	СТ	L	Т	Р	J	С	requisite
1	U18MAT3102	Discrete Mathematics	Theory	BS	3	1	0	0	4	-
2	U18ECT3011	Principles of Communication	Theory	ES	3	0	0	0	3	-
3	U18ITT3001	Computer Architecture	Theory	PC	3	0	0	0	3	-
4	U18ITI3202	Data Structures	Embedded - Theory & Lab	PC	3	0	2	0	4	-
5	U18ITI3203	Object Oriented Programming	Embedded - Theory & Lab	ES	3	0	2	0	4	U18CSI2201
6	U18INI3600	Engineering Clinic III	Embedded – Lab & Project	ES	0	0	4	2	3	-
Total Credits 21										
Total Periods per week 26										

U18ITI2201

DIGITAL LOGIC AND MICROPROCESSOR

L	Τ	Р	J	С
3	0	2	0	4

COURSE OUTCOMES

After successful completion of this course, the students should be able to

- **CO1:** Demonstrate the knowledge of logic gates, Boolean algebra, minimization techniques and apply to design a combinational circuits
- CO2: Analyse and design sequential circuits
- **CO3:** Program 8086 for the given problems
- **CO4:** Interface 8086 with peripheral devices

Pre-requisites :U18EEI1201 - BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

CO/P	O Ma	pping											PS	0	
(S/M/	W ind	icates s	strength	n of con	relatio	n)	S-Stroi	ng, M-l	Mediur	n, W-V	Veak				
COs	Prog	gramme	e Outco	omes(P	Os)										
	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	1	2	3
	1	2	3	4	5	6	7	8	9	10	11	12			
CO1	Μ	Μ	Μ		Μ							Μ	Μ		
CO2	М	М										Μ	Μ		
CO3	М	М	W		Μ							Μ	Μ		
CO4	Μ	Μ	W									Μ			

Course Assessment methods

Direct

- 1. Continuous Assessment Test I, II (Theory component)
- 2. Assignment, Group Presentation (Theory component)
- 3. Pre/Post experiment Test/Viva; Experimental Report for each experiment (Lab component)
- 4. Model examination (Lab component)
- 5. End Semester Examination (Theory and Lab components)

Indirect

1. Course-end survey

Theory Component contents

COMBINATIONAL CIRCUITS

Review of number systems - Logic gates: NAND, NOR gate as universal building blocks - Simplification of four-variable Boolean equations using Karnaugh maps - Half adder, Full adder, Half subtractor, Full subtractor - 4-bit parallel adder and subtractor - 3-bit binary decoder – Decimal to BCD encoder – 8-to-1 multiplexer, 1-to-8 Demultiplxer

SEQENTIAL LOGIC CIRCUITS

Flip flops SR, JK, T, D and Master slave – Characteristic table and equation –Application table – Edge triggering –Level Triggering –Realization of one flip flop using other flip flops – Register – shift registers - Universal shift register .

DESIGN OF SEQUENTIAL CIRCUITS

Design of synchronous sequential circuits: state diagram - State table – State minimization – State assignment. Counters: Synchronous Binary counters – Modulo n counter - Decade - BCD counters, Asynchronous counter, Ring counters.

8086	MICROPROCESSOR	ARCHITECTURE	AND	10 Hours
INSTRU	CTION SET			

10 Hours

9 Hours

8 Hours

Pin diagram - CPU architecture - Memory segmentation - Internal operations - Addressing modes -Instruction formats - Assembler instruction formats: Data transfer instructions, Arithmetic instructions, Logical instructions, Branch-and-loop instructions – Interrupts: Software and Hardware interrupts, Software interrupt programming

PERIPHERAL CHIPS

8255 (PPI), 8254 (Timer), 8257 (DMA), 8259 (PIC), 8251 (USART), 8279(Key Board Display Interface)

Theory: 45	Tutorial: 0	Practical: 0	Project: 0	Total: 45 Hours
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LAB COMPONENT:

LIST OF EXPERIMENTS

I. Digital Electronics

1. Implementation of Logic Circuits

- 2. Adder and Subtractor
- 3. Combinational Circuit Design
 - a) Design of Decoder and Encoder
 - b) Design of Code Converter
 - c) Design of multiplexers and de multiplexers
- 4. Sequential Circuit Design
 - a) Implementation of Shift registers, Serial Transfer
 - b) 4-bit Binary Counter
 - c) BCD Counter
- II. Microprocessors
 - 5. ALP Arithmetic programming

a) Write an ALP to find out factorial of a given hexadecimal number using 8086 MP Data: OAH, OFH, 10H

b) Write an ALP to perform 16 bit arithmetic operations (ADD, SUB, MUL, DIV)

c) Write an ALP to generate the sum of first 'N' natural numbers using 8086 MP 6. Sorting and Data Movement

a) Write an ALP to order give set of hexadecimal numbers in ascending and descending order. Data: 0AH, 0FH, 0DH, 10H, 02H

b) Write an ALP to move block of data from locations 1200H-1205H to 2200H - 2205H

- c) Write an ALP to reverse the given string Data: WELCOME
- 7. Write an ALP to generate square wave using 8255 PPI
- 8. Write an ALP to display the given message using 8279 PKI
- 9. Write an ALP to interface analog to digital converter.

Theory: 0 Tutorial: 0 Practical: 30 Project: 0 Total: 30 Hours

REFERENCES

- M. Morris Mano, Digital Logic and Computer Design, 3rd Edition, Pearson Education, 2013.
- 2. Douglas V. Hall, Microprocessors and Interfacing, TMH, 2010.
- 3. Thomas L. Floyd, "Digital Fundamentals", Pearson Education, Inc, New Delhi, 2013
- 4. Yu-Cheng Liu, Glenn A. Gibson, Microcomputer Systems: The 8086/8088 Family, PHI, 2010.

8 Hours

30 Hours

5. Barry B. Brey, "The Intel Microprocessors: 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium, Pentium Pro Processor, Pentium II, Pentium III, Pentium 4 and Core2", Pearson, 2012.

U18ECT3011 PRINCIPLES OF COMMUNICATION

Course Outcomes:

- **CO1**: Describe the fundamental concepts of communication systems
- **CO2**: Compare analog modulation schemes.
- CO3: Explain digital modulation schemes.
- CO4: Classify standard base band data transmission techniques.
- CO5: Paraphrase the spread spectrum techniques and multiple access techniques

Pre-requisite: Nil

					CO /	PO Maj	pping					
COs			Programme Outcomes(POs)									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S											
CO2	М	W										
CO3	Μ	W	W									
CO4	М											
CO5	Μ	W										

COURSE ASSESSMENT METHODS:

Direct

- 1. Continuous Assessment Test I, II
- 2. Assignment, Group Presentation
- 3. End Semester Examination

Indirect

1. Course-end survey

Topics covered:

INTRODUCTION TO COMMUNICATION SYSTEMS

Basics of Communication System- Electromagnetic Spectrum - Need for Modulation.

ANALOG MODULATION:

Principles of amplitude modulation - AM envelope, Frequency spectrum and bandwidth, Modulation index and percent modulation, AM power distribution – AM Modulator and Demodulator, AM transmitter and receivers - TRF, Super heterodyne receivers. Angle Modulation - FM and PM, Mathematical representation, waveform, Bandwidth, FM modulators and Demodulators, Direct and Indirect FM transmitters.

12 Hours

3 Hours

L T P J C 3 0 0 0 3

DIGITAL MODULATION TECHNIQUE

Introduction, Binary ASK, PSK, QPSK and Binary FSK, Concepts of M-ary Modulation schemes.

BASEBAND DATA TRANSMISSION

Sampling theorem, Reconstruction of message from its samples, PCM, line coding techniques DPCM, DM, ADM, ISI, Time Division multiplexing, Digital Multiplexers.

SPREAD SPECTRUM AND MULTIPLE ACCESS TECHNIQUES **10 Hours** Introduction, Pseudo-noise sequence, DS spread spectrum with coherent binary PSK, Processing gain, Probability of error, FH spread spectrum, multiple access techniques

Theory: 45 **Tutorial: 0 Practical: 0 Project: 0 Total: 45 Hours**

REFERENCES

- 1. Wayne Tomasi, -Electronic Communication Systems: Fundamentals through Advanced, Pearson Education, 2001.
- 2. Simon Haykin, —Digital Communications, John Wiley & Sons, 2003
- 3. Simon Haykin, —Communication Systems, John Wiley & Sons, 4thedn., 2001.
- 4. Taub & Schilling, —Principles of Communication Systems, TMH, 2ndedn., 2003
- 5. Blake, —Electronic Communication Systems, Thomson Delman, 2ndedn., 2002.

10 Hours

10 Hours



Department of Computer Science and Engineering

AY: 2016-17

Date:15.07.2017

Action Taken Report -Faculty Feedback

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S.No	Analysis	Action Taken Report
1.	Faculties suggested to include one credit courses as part of curriculum to make the students expert in the recent technologies	One credit course like U14CSIN03 - Ethical hacking, U14CSIN06 - Interface in health care systems, etc. are included as decided
2.	Discrete Mathematics (R15-UG curriculum) course can be moved either to 3 rd or 4 th semester	In R17 curriculum, U17MAT3104 - Discrete Mathematics course is offered in third semester

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Prepared By (Feedback/BoS Coordinator) (Dr. D. Chandrakala)

Approved By

(Signature of Bos Chairman)

(Dr. J. Cypthia)

Department of Computer Science and Engineering Kumaraguru College of Technology COIMBATORE-641 006, INDIA

Proof for Action taken 2 - Faculty Feedback/student Feedback.

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/L	15CSI	N01				12-1 2	and a set of the set o		di Stela	ave.	2	0	0	0	
Cours After s	e Outc uccessf	omes ful com	pletion	of this	s course	e, the s	tudents	s should	d be ab	le to					
CO1	Expl	ain the	basics c	of Ethic	cal Hack	ting		19-14					_		_
CO2	Appl	v hasic	Penetr	ation Te	esting T	ools		1				-			_
Pre-re	quisit	es :Nil	1 enem			0015		10000		100.0076		1000			-
(S/M/	W indi	cates st	rength o	of corre	Co elation)	O/PO M S-S	Mappin trong, l	ig M-Med	ium, W	-Weak					
COs					Р	rogramn	ne Outco	mes(POs	;)				_		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PC	011	P	012	
CO1	S	S		M	M	S		S	S		-		+	M	
202	5	15		M	M	S	1	S	5					M	
Direc 1.Obj 2. Per	t ective t etration	ype As n Lab E HACK	ssessme Exercise	nt Test (Lab C	(Theor Compon	y comp ent) EMA	oonent) IL HA	CKIN	G		(2+1) He	our	·s	
Direc 1.Obj 2. Per ETHIC	t ective t letration	ype As n Lab E HACK	ING B	nt Test (Lab (ASICS	(Theor Compon S AND	y comp ent) EMA	oonent) IL HA	CKIN	G	rmotion	(2+1 See) H (our	°S	
Direc 1.Obj 2. Per ETHIC ntrod nd At Contro Email Fracing Spoofin Call Sp	t ective t etration CAL H uction tack Ve Is-Infor Hacking back f ng Serie poofing	ype As n Lab E HACK to Ethi ectors-H mation ng and fake ma es-Char -Chang	ING B Securities Securities Cal Had Securities Tracing Securities Display the Securities of the Securities of the Securities of the securities of the Securities of the securities of the securities of the securities of the securities of the security of th	nt Test (Lab C ASICS Cking: Conce y Polic g: Hack hing at the Geo- C addi	(Theor Compon- Compon- S AND Informa pts-Hac ies-Scoj king mai ttack(ou- location ress-Ent	y comp ent) EMA tion Se king Ph pe and il accou tidated inHidin ering D	Donent) IL HA ecurity (hases-Ty Limitat int pass)-Tabna ng the I Darknet(CKIN Overvie ypes of tions of swords bbing (P addre (the un	G Attack Ethica Mail B replacir ess-Unb dergour	ormation cs-Inforn l Hackir ombing- ng phish plocking nd intern	(2+1 Secu mationg Fake ing)- bloch net)	arity on Se mai Mod ked	our Th ccur ilin; lule web	reat rity g- e 03 bsite	
Direc 1.Obj 2. Per ETHIC Introd and At Contro Email Fracing Spoofin Call Sp COMI	t ective t etration CAL H uction tack Ve ls-Infor Hackin g back f ng Serie poofing	ype As n Lab E HACK to Ethi ectors-H mation ng and fake ma es-Char -Chang	ING B ical Hacking Securit Tracing iils-Phis nging th ing MA	nt Test (Lab C ASICS Conce ty Police g: Hack hing at the Geo- C addu	(Theor Compon- Compon- S AND Informa pts-Hac ties-Scop king mai ttack(out location ress-Ent	y comp ent) EMA ation Sec king Ph pe and il account atdated in-Hidin ering D AND	IL HA ecurity (nases-Ty Limitat ant pass)-Tabna ng the I Darknet(VIRU	CKIN Overvie ypes of tions of swords bbing (P addre (the un SES	G Attack Ethica Mail B replacir ess-Unb dergoun	ormation cs-Inforn l Hackir ombing- ng phish plocking nd intern	(2+1 Secunations) Fake ing)- bloch net) (2+1	a) Ho urity on Se mai Mod ked	The cur ilin, lule web	rs rreat rity g- e 03 bsite urs	
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Phones Using Superboot-Android Rooting Tools

Reversing APK-Unpacking APK files-Dex2jar-Java Decompiler Android Malwares: Session Hijacking Using DroidSheep-Android-based Sniffer: FaceNiff-Android Trojan: ZitMo (ZeuS-in-the-Mobile)-Android Trojan: AndroRAT Mobile Forensics: Bypassing Mobile security-Dumping all data to local system-Android BOTNET Remotely hacking Android mobiles-Dumping Call logs-Dumping Contacts-Hacking Mobile Camera and Microphone **GOOGLE DORKING AND WEB SECURITY** (2+1) 3 Hours Google Dorking: Downloading paid books-Getting sensitive credit card information-Hacking SQL/XSS-Downloading Sensitive dorks for searching Webcam-Advanced Remote Company/Organisation data-Advanced Website Attacks: Web Application Architecture-DOS/DDOS (Distributed denial of service-DTA (Directory Traversal Attack)-SQL Injection-XSS(Cross Site Scripting) Attack-RFI (Remote File Inclusion) Vulnerability Attack-Securing The Website/Webserver PENETRATION TESTING TOOL AND WIRELESS HACKING (2+1) 3 Hours Penetration Testing with Kali-Linux: Types of Pen Testing-Pen Testing Techniques-Hacking Windows OS Remotely-Dumping Remote windows Password-WebServer Penetration Testing Wireless Hacking: Types of Wireless Encryption-How to Break WEP Encryption?-How to Break WPA/WPA2 Encryption?-How to Defend Against WPA Cracking?-Jamming Signal Attack Wireless cracking automated scripts **Total: 15 Hours Project:** 0 **Practical: 5 Tutorial: 0** Theory: 10

U14CSIN06 INTERFACING IN HEALTH CARE SYSTEMS

L	Т	P	С	
1	0	0	1	

Course Outcomes:

After successful completion of this course, the students should be able to

CO1	Explain theHL7, DICOM, HIPAA, X12health standards.
CO2	Apply interfacing aspects in Healthcare systems.

Pre-requisite: Nil

					CO/I	PO Ma	pping					
	(S/M/V	V indic	ates str	ength o	of corre	lation)	S-5	Strong,	M-Mee	dium, W	-Weak	
COs					Progr	amme	Outcor	nes(PO	s)			
COS	PO1	PO2	PO2 PO3 PO4 PO5 PO6 PO7 PO8 P	PO9	PO10	PO11	PO12					
CO1	S	S			M				M	M		M
CO2	S	S			M				M	М		М

Course Assessment methods:

Direct

Objective Type Assessment Test (Theory component)

STANDARDS IN HEALTHCARE

Need for standards in healthcare-List of common and most widely used standards - The HL7 and HL series of standards in detail-Components of HL7 standards - Message segments. Components of HL7 standards - Segment fields - Components of HL7 standardsauthentication

DICOM STANDARDS

DICOM standards – worklist, viewing, imaging, post-processing- Comparison of DICOM vs HL7 standards-Libraries available to implement HL7 and DICOM standards.

Theory: 15	Tutorial: 0	Practical : 0	Total hours:15 Hours

8 Hours

7 Hours

Proof for Action Erken 2

U17MAT3104

DISCRETE MATHEMATICS (Common to CSE, IT, ISE)

L	Т	P	J	C
3	1	0	0	4

9

COURSE OUTCOMES:

AFTER SUCCESSFUL COMPLETION OF THIS COURSE, THE STUDENTS SHOULD BE ABLE TO

CO1: Have a better understanding of sets and application of set theory.

CO2: Apply the knowledge of relations, equivalence relation and their properties.

CO3: Understand different kinds of functions.

CO4: Apply the knowledge of Combinatorics

CO5: Understand logical arguments and constructs simple mathematical proofs.

CO6: Know various graphs and learn different algorithms.

Pre-requisite courses: NIL

CO/PO MAPPING (S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak											CO/PSO Mapping				
COs	PROGRAMME OUTCOMES (POs)												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C01	S	M											М	М	М
CO2	S	M											M	M	
CO3	S	M											М	М	М
CO4	S	S	М			1 803		1000					М	М	М
C05	S	S	М										М	M	М
CO6	S	S	М										М	M	M

COURSE ASSESSMENT METHODS

DIRECT

- 1. Continuous Assessment Test I, II
- 2. Open book test; Cooperative learning report, Assignment; Journal paper review, Group Presentation, Project report, Poster preparation, Prototype or Product Demonstration etc. (as applicable)
- 3. End Semester Examination

INDIRECT

1. Course-end survey

THEORY COMPONENT CONTENTS

SET THEORY

9+3 Hours

Algebra of sets – The power set – Ordered pairs and Cartesian product – principle of inclusion and exclusion.

Relations on sets –Types of relations and their properties - Equivalence relations –Relational matrix and the graph of relation – Operations on relations.

1.G.W. Signature of BOS chairman, CSE
FUNCTIONS

7+2 Hours

Functions - Type of functions - Injective, surjective and bijective functions - Composition of functions -Inverse functions -Permutation functions.

COMBINATORICS

9+3 Hours

Mathematical induction- The basics of counting-Permutations and combinations-Recurrence relations-Solving linear recurrence relations

LOGIC

11+4 Hours

Propositions- Logical operators- Normal forms -Rules of inference-Consistency and inconsistency-Propositional logic- Proofs-Predicates- Quantifiers- Universe of discourse - Logical equivalences and implications for quantified statements-Rules of specification and generalization - Validity of arguments.

GRAPH THEORY

9+3 Hours

Graphs- Types of graphs- Matrix representation of graphs- Graph isomorphism- Walk - Path- Cycles-Eulerian graphs - Hamiltonian graphs- Planar graphs- Euler formula- Shortest path algorithms.

Theory 45	Tutorial: 15	Practical: 0	Project: 0	Total: 60 Hours
I neory: 45	I utoriai. 15	I I dettent v	J	

REFERENCES

1. Liu C.L, "Elements of Discrete Mathematics, Second Edition, McGraw Hill 1985.

- 2. Mott J.L, Kandel A. and Baker T.P.,"Discrete Mathematics for Computer Scientists and Mathematicians, Second Edition, Prentice Hall India, 1986.
- 3. J.P.Trembly, R. Manohar, Discrete Mathematical Structures with applications to Computer Science, TMHInternational Edition (Latest Edition).
- 4. NarsinghDeo, Graph Theory with Applications to Engineering and Computer Science, Prentice -Hall, Engle Cliffs, N. J.
- 5. Harary F, Graph Theory, Narosa, 1969.
- 6. Thomas H.C., A Leiserson C.E., Rivest R.L, Stein C.A., "Introduction to a Algorithms(2nd Edition), MIT press and McGraw-Hill.2001.

Signature of BOS chairman, CSE



KUMARAGURU COLLEGE OF TECHNOLOGY, COIMBATORE-641049

(An Autonomous Institution affiliated to Anna University, Chennai)

Action Taken Report - Faculty Feedback

Department of Electronics and Communication Engineering

Academic Year: 2016 – 2017

Date: 15.07.2017

S.No	Feedback	Action Taken
1.	Circuit theory and Electron Devices need not be swapped as circuit theory is a pre- requisite for Electron Devices	The suggestion is incorporated and the courses Electron Devices and Circuit Theory are not swapped.
2.	Z-Transform and frequency response to be included in Signals and Systems	Z-Transform and frequency response have been included in U15ECT403-Signals and Systems course.
3.	Separate unit on guided waves can be clubbed in waveguides and resonators in U15ECT503-Transmission Lines and waveguides.	Separate unit on guided waves has been clubbed in waveguides and resonators in U15ECT503-Transmission Lines and waveguides course.
4.	To rename Advanced Computer Architecture as Computer Architecture with Morris Mano and Karl Hamacher as Textbooks	The course Advanced Computer Architecture is renamed as U15ECTE10- Computer Architecture.

Prepared By,

J. Litter

BoS Coordinator

Approved By,

BoS Chairman

Proof for Action taken 2:Z-Transform and frequency response have been included in U15ECT403-Signals and Systems course.

U15ECT403

SIGNALS AND SYSTEMS

L	Т	P	C
3	2	0	4

Course Outcomes (COs):

After successful completion of the course, the student should be able to:

CO1: Categorize different types of signals (K4).

CO2: Distinguish different types of systems (K4).

CO3: Determine the Fourier series representations of periodic signals (K4).

CO4: Examine Continuous Time signals and system by using Fourier Transform (K4).

CO5: Analyze Discrete Time signals and systems by using DTFT and Z Transform (K4).

CO6: Explain sampling of continuous time signals (K2).

Pre-requisite: Nil

		(S/N	л/W in	dicates	streng	Contract Con	O/PO I	Mappin on)	ng S-Stroi	ng, M-M	edium.	W-Weak		
						Pro	gramm	e Outco	omes(F	POs)	1			
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSOI	DEOD
CO1	S	M									1011	1012	1501	F 502
CO2	S	M							20.50				2 10 10	
CO3	S	S	М	M									M	
CO4	S	S	М	М					section 1				M	
CO5	S	S	М	М	S								M	S
CO6	S	М								Second 1				

Course Assessment methods:

Direct	Indirect			
1. Internal Test – I	Course end survey			
2. Internal Test – II				
3. Assignment	in 2 hand a Grand State of States and States and States and States			
4. Group Presentation				
5. End Semester Exam	was 7 party shall be and spectral hard the shall be			

Hrs

17

CONTINUOUS AND DISCRETE TIME SIGNALS AND SYSTEMS

Continuous Time (CT) & Discrete Time (DT) signals- Classification - standard signals – basic operations on signals - Continuous time and discrete time systems - properties - Linear Time Invariant (LTI) systems- Stability- Causality- Continuous and discrete convolution.

FOURIER ANALYSIS OF CT SIGNALS AND SYSTEMS

12

Exponential Fourier series analysis of periodic signals- spectrum - Properties of Continuous Time Fourier Series (CTFS) - Convergence of CTFS - Representation of aperiodic signals by Continuous Time Fourier Transform(CTFT)- spectrum - Properties of CTFT - Convergence of CTFT - CT system representation by differential equation - Frequency response of systems characterized by differential equations

FOURIER ANALYSIS OF DT SIGNALS AND SYSTEMS

Exponential Discrete Time Fourier Series (DTFS)-spectrum- –properties - Discrete Time Fourier Transform (DTFT) - Properties – discrete time system representation by difference equations - Frequency response of systems characterized by difference equations.

Z TRANSFORM ANALYSIS OF SIGNALS AND SYSTEMS

Z transform – ROC –Forward and Inverse Transform use Residue, long Division, Partial Fraction methods - Properties of Z transform – Pole-zero plot- Analysis and characterization of LTI system using Z transform- frequency response of DT systems.

SAMPLING

Representation of continuous time signals by its samples - Sampling theorem – Reconstruction of a signal from its samples, aliasing.

Theory: 45 Hrs

Tutorial: 15 Hrs

Total: 60 Hrs

12

13

06

TEXT BOOK:

1. Oppenheim A.V.Wisky A.S, 'Hamid Nawab.S, "Signals and Systems", Second Edition, Pearson, 2013.

REFERENCES:

- 1. John G Proakis and Manolakis, "Digital Signal Processing Principles, Algorithms and Applications", Pearson, Fourth Edition, 2014.
- 2. Haykin. S, Barry Van Veen, "Signals and Systems", 3rd Edition, John Wiley & Sons, 2012.
- 3. H. P. Hsu, "Signals and Systems" Schaum's Outline Series, McGraw Hill Professional, 2010.
- 4. M. J. Roberts, "Signals and Systems Analysis using Transform method and MATLAB", Second Edition, McGraw-Hill Education, 2011.
- 5. K. Lindner, "Signals and Systems", McGraw Hill International, 1999.

back

Proof for Action taken 3: Separate unit on guided waves has been clubbed in waveguides and resonators in U15ECT503-Transmission Lines and waveguides course.

U15ECT503

TRANSMISSION LINES AND WAVEGUIDES

L	Τ	Р	C
3	2	0	4

Course Outcomes:

After successful completion of this course, the students should be able to

- **CO1:** Discuss the fundamental concepts of wave propagation in Transmission Lines and Wave Guides (K2).
- CO2: Analyze the line parameters and various losses in transmission lines (K3).

CO3: Apply smith chart for line parameter and impedance calculations (K4).

CO4: Evaluate the characteristics of Parallel plane and Rectangular wave guides (K3).

CO5: Evaluate the characteristics of Circular wave guides and Rectangular cavity resonators(K3).

Pre-requisite:

1. Electromagnetic Fields

			1.12			C	O/PO I	Mappi	ng	· · · ·	Salar St		Contract of the	Section (1997)
		(S/N	∕l/W in	dicates	strengt	th of co	orrelatio	on) S	S-Stror	ng, M-M	edium, V	W-Weak	la den es	
						Pro	gramm	e Outco	omes(P	Os)	rist filte			6785229
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	S	M	2										М	
CO2	S	М				-						second.	М	angeart.
CO3		S	М		М	-	ands			amoÖ	1000000		S	М
CO4	S	М		122-11	120.03	02030							М	
CO5	S	М										3	М	

Course Assessment methods:

Direct	Indirect
1.Internal Test – I	Course end survey
2.Internal Test – II	s para Anglingson a provincial and a Roman and
3.Assignment	
4.Group Presentation	
5.End Semester Exam	

TRANSMISSION LINE THEORY

Transmission (ABCD) parameters, Types of transmission lines – Line parameters - General Solution of the transmission line – Standard forms for voltage and current - The infinite line – The two standard forms for the input impedance of a transmission line.

Waveform distortion - distortion less transmission line - Loading of transmission lines, Transfer

Hrs 12 impedance - Reflection factor, reflection loss, return loss, Insertion loss

THE LINE AT RADIO FREQUENCIES

12 Standing waves and standing wave ratio on a line - Eighth wave line - Quarter wave line and the half wave line. The circle diagram for the dissipation less line - The Smith Chart - Application of the Smith Chart - Conversion from impedance to reflection coefficient and vice-versa. Impedance to Admittance conversion and vice versa - Input impedance of a lossless line terminated by impedance - Single stub matching and Double stub matching.

GUIDED WAVES

Waves between parallel planes of perfect conductors - Transverse electric and transverse magnetic 12 waves - characteristics of TE and TM Waves - Transverse Electromagnetic waves - Velocities of propagation - component uniform plane waves between parallel planes -Wave impedance.

RECTANGULAR WAVEGUIDES

12 Transverse Magnetic Waves in Rectangular Wave guides - Transverse Electric Waves in Rectangular Waveguides - characteristic of TE and TM Waves - Cutoff wavelength and phase velocity - Impossibility of TEM waves in waveguides - Dominant mode in rectangular waveguide - Attenuation of TE and TM modes in rectangular waveguides - Wave impedances- Excitation of

CIRCULAR WAVE GUIDES AND RESONATORS

Bessel functions - Solution of field equations in cylindrical co-ordinates - TM and TE waves in circular guides - Wave impedances- Dominant mode in circular waveguide - excitation of modes - Microwave cavities, Rectangular cavity resonators, Q factor of rectangular cavity resonator for TE101 mode.

Theory: 45 Hrs

Tutorial: 15 Hrs

TEXT BOOKS:

- J.D.Ryder "Networks, Lines and Fields", PHI, New Delhi, 2003. 1.
- E.C. Jordan and K.G.Balmain "Electro Magnetic Waves and Radiating System", PHI, New 2. Delhi, 2003.

REFERENCES:

- Mathew N. O. Sadiku "Elements of Electro Magnetics", Seventh edition, Oxford, New York, 1.
- Ramo, Whineery and Van Duzer: "Fields and Waves in Communication Electronics" John 2. Wiley, 2003.
- Clayton. R. Paul, Keith W. Whites, Syed. A. Nasar "Introduction to Electro Magnetic 3. Fields", Third edition, WCB/McGraw-Hill, 1998.

back

12

Total: 60 Hrs

Proof for Action taken 4: The course Advanced Computer Architecture is renamed as U15ECTE10-Computer Architecture.

U15ECTE10

COMPUTER ARCHITECTURE

L	Τ	P	C
3	0	0	3

Course Outcomes:

After successful completion of this course, the students should be able to

- **CO1:** Explain the functional units of computers (K2).
- CO2: Design modules for performing computer arithmetic (K3).
- CO3: Illustrate the concepts of control unit design (K2).
- CO4: Compare the different types of memories (K2).
- CO5: Design interfaces for I/O devices (K3).
- CO6: Describe the structure and networking of multiprocessors (K2).

Pre-requisite:

1. Microprocessors and Microcontrollers

						C	O/PO I	Mappi	ng					
		(S/N	∕/W in	dicates	strengt	th of co	orrelatio	on) s	S-Stror	ng, M-M	edium, '	W-Weak		
		100				Pro	gramm	e Outco	omes(P	POs)				
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	S													
CO2			S	M			-27.0	1.0%	1000	3.931	1.5.7.9	0200	M	
CO3		M	S			12020	n in	neerie					M	
CO4	S	M									1	100 00000		
CO5			S										M	
CO6	S												. M	

Course Assessment methods:

Direct	Indirect
1. Internal Test – I	Course end survey
2. Internal Test – II	
3. Assignment	
4.Group Presentation	
5.End Semester Exam	

INTRODUCTION

Hrs 05

Evolution of computers - Functional units of Computers - Operational concepts - Performance - Memory Locations and addresses - Memory operations - Instructions and Instruction Sequencing

- Addressing modes.

COMPUTER ARITHMETIC

Addition and Subtraction of Signed Numbers - Design of fast adders - Multiplication of Positive numbers-Signed-operand Multiplication - Fast Multiplication - Integer Division-Floating point numbers and operations - Implementing floating point operations.

CONTROL DESIGN

Fundamental Concepts - Execution of a complete instruction-Multiple-bus organization-Hardwired control - Micro programmed Control - Basic Concepts of Pipelining - Data Hazards and Instruction Hazards - Performance Considerations.

MEMORY SYSTEM

Basic Concepts of Memory – Semiconductor RAM Memories – ROM – Types - Speed, Size and Cost of memory - Cache memory and performance considerations - Virtual Memory – Secondary storage devices.

INPUT/OUTPUT ORGANIZATION

Input / Output Devices - Serial and Parallel I/O – Accessing I/O Devices – Interrupts - Direct Memory Access – Buses – Interface circuits - Standard I/O Interfaces

MULTIPROCESSORS AND MULTICOMPUTERS

Forms of parallel processing- Vector processing architecture - Array processors-Structure of General Purpose Multiprocessors - Interconnection networks-Memory organization in multiprocessors – Multicomputers.

Tutorials: Hrs	Total: 45 Hr

TEXT BOOKS:

Theory: 45 Hrs

- 1. Carl Hamacher, Zvonko Vranesic and Safwat Zaky, "Computer Organization", Mcgraw Hill Education(India)Private limited, Fifth edition, 2014.
- 2. Morris Mano M, "Computer System and Architecture", Pearson Education, New Delhi, Third edition, 2004.

REFERENCES:

- 1. Kai Hwang and Briggs F A, "Computer Architecture and Parallel Processing", McGraw Hill International Edition, New Delhi, 1985.
- 2. Hayes J P. "Computer Architecture and Organization", McGraw Hill, New Delhi, Third edition, 2002.
- 3. Stallings W, "Computer Organization and Architecture: Designing for performance, Pearson Education, New Delhi, Seventh Edition ,2005.
- 4. Patterson D and Hennessy J, "Computer Organization and Design: The Hardware/Software Interface", Morgan Kaufmann Publishers, Inc, Third edition, 2007.

<u>back</u>

09

09

06

07

09



Department of Textile Technology

AY: 2016-17

Date: 15.07.2017

Action taken report -Teacher Feedback

S.No	Analysis	А	ction taken report
1.	Open electives courses offered for the departments can in the form of domain	The following o other department	pen elective courses offered for ts included in the syllabus
	wise.	Course code	Course Name
		U15TX0E01	Textile in Civil Engineering
		U15TX0E02	Textile in Automobile
		U15TX0E03	Textile Mechatronics
		U15TX0E04	Functional Finishes in Textiles
		U15TX0E05	Textile in Bio-Medical Application

Approved By,

Dr.Bharadhi Dhurai

BoS Chair person



Department of Textile Technology

AY: 2016-17

Date: 15.07.2017

Action taken report -Teacher Feedback

S.No	Analysis	A	ction taken report		
1.	Open electives courses offered for the departments can in the form of domain	The following open elective courses offered for other departments included in the syllabus			
	wise.	Course code	Course Name		
		U15TX0E01	Textile in Civil Engineering		
		U15TX0E02	Textile in Automobile		
		U15TX0E03	Textile Mechatronics		
		U15TX0E04	Functional Finishes in		
			Textiles		
		U15TX0E05	Textile in Bio-Medical		
			Application		

Proof

The following open elective courses offered for other departments included in the syllabus

Course code	Course Name			
U15TX0E01	Textile in Civil Engineering			
U15TX0E02	Textile in Automobile			
U15TX0E03	Textile Mechatronics			
U15TX0E04	Functional Finishes in			
	Textiles			
U15TX0E05	Textile in Bio-Medical			
	Application			

	Open Electives (OE)								
	Course Code Course Title Catego Contact Hrs/Week							K	
			ry	Hours		& C1	redit	S	
					L	Т	P	C	
1.	U15TX0E01	Textile in Civil Engineering	OE	3	3	0	0	3	
2.	U15TX0E02	Textile in Automobile	OE	3	3	0	0	3	
3.	U15TX0E03	Textile Mechatronics	OE	3	3	0	0	3	
4.	U15TX0E04	Functional Finishes in Textiles	OE	3	3	0	0	3	
5.	U15TX0E05	Textile in Bio-Medical Application	OE	3	3	0	0	3	

R Signature of BOS chairman, TXT



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Department of Automobile Engineering

AY: 2016-17

Date: 15.07.2017

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Action taken report - Teachers Feedback

S.No	Analysis	Action taken report
1	Modelling and Simulation of Automotive systems (U15AUT404): Simplify the syllabus with simple controllers and remove LAMBA controllers.	Syllabus has been modified by the subject expert.
2	Automotive Sensors and Embedded systems (U15AUT603): Suggestions were given to include the topics: Overview of CAN & Software architecture.	The topics were included, and the syllabus has been modified.
3	Research & Technical Skill Development (U15AUP703): New Practical course to be introduced to promote research publications and to participate in design competitions.	Included as practical course.

Prepared by,

Approved by,

10 BoS Chairman

BoS Coordinator

يحييدين التسوير الالالال

configuration (boot service. Host - target interaction) - Booting reconfiguration - Managing IDE - Target servers, agents, Cross development, debugging

EMBEDDED SYSTEM AND COMMUNICATION PROTOCOLS IN 8 Hours AUTOMOTIVE APPLICATIONS

Engine management systems – Gasoline / Diesel systems, various sensors used in system – Electronic transmission control – Vehicle safety system – Body electronics – Infotainment systems – Navigation systems

Introduction to control networking - Vehicle communication protocols - Introduction to CAN, LIN LIST OF EXPERIMENTS: 30 Hours

1. Anti Pinch System for power windows

n		Sem	iester - 7						
S.No	Course Code	Course Title	Category	Contact	Hrs/Week &Credits				Pre-
••••				Hours	L	Т	P	С	requisites
Theory					•	•	ł		
1	U15AUT701	Vehicle Body Engineering	PC	3	3	0	0	3	
2	U15GST006	Product Design and Development	EEC	3	3	.0	0	3	
3	PE3	Professional Elective III	PE	3	3	0	0	3	
4	PE4	Professional Elective IV	PE	3	3	0	0	3	
5	5 OE3 Open Elective III		OE	3	3	0	0	3	
Practical							.	4	J
7	U15AUP701	Vehicle Maintenance and Testing Laboratory	PC	2	0	0	2	1	
8	U15AUP702	Project Phase - I	EEC	4	0	0	4	2	
9 UISAUP703 Technical & Research Skills Development		EEC	2	0	0	2	1		
	1			·					





Department of Management Studies

AY: 2016-17

Date: 17.07.17

Action taken report -Faculty Feedback

S.No	Analysis	Action taken report		
1.	Internal assessment system to be improvised	New Assessment has been proposed		
2.	Opportunities to participate in interdisciplinary research	Consultancies are recommended to be executed by teams jointly		
3.	Interaction with industry Guest lecture and workshops	Industry connects established		
4.	Out of class availability of faculty	Faculty were allowed to be resource persons for other institutions under prior permission		
5.	Encourage students to present papers in external colleges	Student/Faculty joint publication encouraged and linked to performance appraisal		
6.	Encourage students to take part in national level technical symposium	Students are now encouraged and now apply for funding for attending technical symposium		
7.	Identify students and support them to Focus on conducting scholarly research	Higher education in student facilitated. PhD programmes was made available for the students		
8. Create opportunities for original ideas and solutions		Start-up ideas were encouraged and joint discussions were tabled.		

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Prepared By,

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BoS Coordinator

Approved By,

BoS Chairman

Proof Of Action Taken

1. Proof of New Assessment proposed in Regulation 2017

5. Assessments and Examination

Testing not only lets you and your students know how much they have learned, it also provides a chance for more learning to take place, by reinforcing course material or by requiring students to use or think about what they have learned in a new way. Tests should be designed with primary course objectives in mind and should cover material from all components of a course (sections, lectures, textbooks, etc.).

5.1 Assessment Weightages

The program follows semester system and the learning will be assessed continuously (formative) / and End of Semester (Summative) assessment. End semester exams may be paper based/ computer based or integrated.

Credits	Continuous Assessment	End Semester		
	Format	Marks	Format	ESM
4 Credits	CAT-I & CAT II (written/ computer based), and other course based assessments as indicated in course plan	50	Written/ Computer based Exam or Project Report & Viva Voce	50
3 Credits	CAT-I & CAT II (written/ computer based), and other course based assessments as indicated in course plan	50	Written/ Computer based Exam or Project Report & Viva Voce	50
3 Credits (Prof Development Courses)	Decided by course committee and indicated in course plan	50		
2 Credits	Decided by course committee and indicated in course plan	50	2	
1 Credit	Decided by course committee and indicated in course plan	50		

2. Proof of Consultancy Policy for BS faculty



Consulting Policy

Version1 (2012)

1. Introduction

KCT.BS recognizes that consultancy can be a vehicle through which it can take a leadership role in the dissemination of knowledge and expertise. It is acknowledged that commercial research is integral to the operations of the institution and this work can bring financial gain and enhance our reputation consulting activities can bring financial and other benefits both to the institution and its employees. Such activities serve to link the institution and staff more closely to the wider community, especially industry. The Consulting divisions of KCT.BS – Centre for Organizational Development (COD) and Centre for Institutional Development (CID) aim to offer consultancy services to industry and educational institutions respectively

The policy outlines the requirements for these various forms of consultancy so that both the institution and its employees may understand what is required in the conduct of all forms of consultancy. Within this framework the Institution seeks to encourage consultancy.

2. Objectives

The Consultancy Policy aims to:

- Encourage and develop the research activities of the Institution through increased consultancy activity;
- Provide significant financial incentives to encourage faculty to undertake consultancy activity;
- Ensure an appropriate return to the Institution for the deployment of its resources;
- Encourage links between the Institution and industry and business groups.

3.	Proof	ot	the	number	of	Indust	гy	connects	for	Guest	lectures	
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N O	N Date Guest O Date Faculty Name		Guest Faculty Designation and university/Industry Name	
1	July 15, 2016	B.Shanmuga n,	Assistant General Manager – HR for Premier Group Mills	Factories Act 1948
2	July 22, 2016	Hari Vimalesh	Client Management, Wildcraft .Pvt. Ltd	Sales Management
3	July 27, 2016	Jayesh Chettoor	Project Manager, Robert Bosch Engineering and Business Solutions	Scrum Approach in Managing Projects
4	July 27, 2016	Kanishka Arumugam	Director, EKKI and Deccan Pumps Pvt. Ltd. Coimbatore	My Multicultural
5	August 10, 2016	Shantha Kumar Sarrao	Assistant Manager – Revenue Times Delhi Airport	Art of Selling
6	August 22, 2016	D. Jayakumar	Managing Partner, Sri Srini Tech Creators, Coimbatore	Quality Control Techniques
7	August 23, 2016	Sarath Nair	Cluster Head, TamilNadu HDFC Bank Ltd, Coimbatore	Institutional and Trade
8	Septem ber 30, 2016	Austin	PM, CEO of MaxValue Talent Central	online consumer behavior
9	October 1, 2016	Dr. K. Rajamani	Manager Technical, Bosch	Introduction to Business

List of Guest Faculty (2016 - 17)

1	October 3, 2016	Niranjan Parameswar an	Executive Director, Cameron India operations, Cameron, a Schlumberger Company	Corporate Strategy
1 1	October 7, 2016	Chellam Narendiran	Trainer – Srijan & T-school	Three Lenses
1 2	October 13, 2016	K.Thangaraj	Senior Associate, Avighna Financial Services, Mumbai	Investments and Wealth Creation
1 3	October 19, 2016	Balakrishna n,	Deputy General Manager(Retd) NABARD	Monetary Policy and its implications on Indian Economy
1 4	October 20, 2016	Vanithamani	HR, Texmo	Managing Organization Behaviour
1 5	Novemb er 9, 2016	Badri Narayanan	Chartered Accountant	International Financial and Reporting Standards
1 6	Decemb er 3, 2016	Janarthanan V	IBM – Human Resources International Assignments Tax Analyst Bengaluru	Stay Motivated
1 7	Decemb er 5, 2016	Dr. Ponni Muralidhara n.V	Psychiatry at KG Hospital	Managing Personal and Interpersonal Skill
1 8	Decemb er 19, 2016	P.Aravind Thangam	Partner, Paul & Aravind Chartered Accountants, Coimbatore	Demonetization and Corporate Budgeting
1 9	Decemb er 22, 2016	Jeya Lakshmi Maharai	Associate Service Delivery Manager, Indus Ind Bank, Coimbatore	Indian Private Insurance Industry _ Prospects and challenges
2 0	Februar y 3, 2017	Gerard J. Christian	Senior Vice President and Global Business Services Officer of VWR	Big Data and its future
2 1	Februar y 16, 2017	M.N.Varadha rajan	Director, Madura Agro Process, Coimbatore	Marketing Green products- Opportunities and Challenges
2 2	Februar y 21, 2017	Dr. Arunkumar A	Director BioAges Innovation (P) Ltd, Coimbatore	New Product Development
2 Februar 3 y 23, 2017		A. Somasundar am	Chartered Accountant, Charter President, TIE – Coimbatore	Entrepreneurial Weather and its Scope in Tamil Nadu
2 4	March 1, 2017	Motilal	Head Emerging Business, Milltex Engineering Pvt, Ltd Coimbatore	Anatomy of an Entrepreneur
2 5	March 13, 2017	Ranjit Krishnan	HR CareerNet, Chennai	Current scenario and challenges in recruitment
2 6	March 15, 2017	Nasser A Khan	Country Head HR, Cameron	Workforce Planning and Forecasting - Cameron Experience
2 7	March 16, 2017	V.M. Shivakumar	Finance Controller, Cameron	Capital Budgeting Decisions
2 8	March 20, 2017	Mr.Sathish Kumar Sundaram	Manager-Social Media Listening and Monitoring, INFOSYS, Bangalore	Social Media Marketing
2 9	March 23, 2017	Dr. N. Anitha Dr. Piyush Patwa	DGO., Consultant Obstetrician, Gynaecologist& Infertility Specialist Consultant Laparoscopic Surgeon in	Health and Well Being

			department of Surgical Gastroenterology, Gate Way Clinic Coimbatore	
3 0	April 7, 2017	Jahnavi Reddy	Managing Director - Graphixtron Branding & Advertising Pvt Ltd - Hyderabad	Things I learnt from my Entrepreneurial Journey
31	April 20, 2017	Mr. V.Mohanraj S. Ravikumar,	CEO CMD, Delta Capitals Coimbatore	Capital Markets-An Overview
2	April 21, 2017	Mr. Senthil Kumar	distributor for leading household Electricals products	My Journey - As a
3 3	April 25, 2017	Mr.K.Ravi,	Chief Financial Officer, Roots Groups of Companies and Director, Roots Multiclean Ltd, Coimbatore	Working Capital Management in Manufacturing
3 4	May 3, 2017	A.Shanmuga m, S	Senior Manager, TUV Rheinland India Ltd, Coimbatore	Organizations" ISO-9001 Quality
3 5	May 9, 2017	Mr. Shridhar B. Sutar	Industrial Engineer – Applications (Process Simulation), MAXrad SOFTware (India) Pvt Ltd, Bangalore	Simulation for Business
3 6	May			'My Journey - As an
	10,2017	Tiana Tran	CEO, Govreports	successful entrepreneur

4. List of Faculty as resource persons in other institutions

S.No	Date	Faculty name	Role	Venue
1	June 15, 2016	Dr. Vijila Kennedy	guest of honour	PSGR Krishnammal College for Women
2	July 2, 2016 July 25, 2016	Dr. Lakshmi Meera BL Dr. Lakshmi Meera BL	speaker	Dr. Mahalingam College of Engineering and Technology, Pollachi
	, , ,		Speaker	Nirmala College
4	July 18, 2016	Deepa M	resource person	Periyar Institute of Management Studies, Periyar University, Salem
5	July 15, 2016	Dr. Mary Cherian	Member	VIT, Vellore
6	2016.	Dr. Mary Cherian	resource person	Sardar Vallabhai Patel International School Of Textiles & Management Compatore
7	August 29, 2016	Dr. Poongodi B	speaker	Sri Ramakrishna Women's Arts and Science College, Coimbators
8	September 9, 2016	Dr. Jaisankar S & Dr. Nalini P	resource person	P.K.R. Arts College for Women, Calif
9	September 20, 2016	Lakshmi Subbramani	facilitator	Dhanalakshmi Srinivasan College of
10	September 26-27, 2016	Senthil Kumar A & Dr. Kirupa Priyadarshini M	Knowledge partner	St. Joseph's College of Commerce (Autonomous) Bengalum

1 -		1		
	October 14,			KG College of Arts and Science, KGiSL
11	2016	Anshul Saxena	chief guest	Campus
	October 18,			Dr.SNS Rajalakshmi College of Arts and
12	2016	Dr. Mohanamani P	facilitator	Science
13	0ctober 19- 20, 2016	Dr. Gokilavani R	Placement	SUMS
	November,	Dr. Kirupa	houseshield	
14	28 2016	Priyadarshini M	resource person	SNS College of Arts and Science
15	December 5, 2016	Deepa M	Member of Board	Vidyalaya Management Committee (VMC), Kendriya Vidyalaya Sulur.
16	December 28, 2016	Dr. Vijila Kennedy	resource person	PSGR Krishnammal College for Women, Coimbatore
17	January 31, 2017.	Dr. Nalini P	resource person	Park College of Technology,
18	February 4, 2017	Dr. Lakshmi Meera BL	facilitator	Avinashilingam Engineering College for the 30 students
19	February 15- 16, 2017	Dr. Kirupa Priyadarshini M	resource person	Research Centre of St. Joseph's College of Commerce
20	February 17, 2017	Dr. Nalini P	judge	GRG School of Management studies
	Falses 10			Department of Agricultural and Rural Management in the Centre for Agricultural
21	2017.	Dr.Poongodi B	panelist /ludge	and Rural Development Studies (CARDS), Tamil Nadu Agricultural University
22	February 23, 2017	Dr. Nedunchezhian VR	Board Member	Faculty of Management Sciences for the Affiliated Institutions of Anna University, Chennai
23	February 24, 2017.	Dr. Kirupa Priyadarshini M	resource person	Chetan Business School, Hubali
24	February 24, 2017.	Dr. Nalini P	chief guest	Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt.
25	March 19, 2017	Deepa M	Selection Board	Kendriya Vidyalaya Coimbatore and AFS Sulur
26	March 21, 2017	Dr.Poongodi B	Expert panelist	Tamil Nadu Agricultural University
27	March 31, 2017	Deepa M	Member of Board	Vidyalaya Management Committee (VMC), Kendriya Vidyalaya Sulur.
28	April 1, 2017.	Deepa M	event judge	Sree Narayana Guru Institute of Management Studies
29	10-May-17	Dr. Kirupa Priyadarshini M	external expert	Karunya University Business School
30	20-Apr-17	Dr. Jaisankar S	Ph.D Viva Panel	PSG IM
31	June 7, 2017	Suresh GK	Resource member	IIM B

5. Proof- Student/Faculty joint publication encouraged and linked to performance appraisal

EUSENESS SCHOOL Annual Plan 2016-17

			1 20	10.40
Vision Doc Item No	Vision Vivid Description	Target Initiative / Activity	20 Dept. Target 5 4 1 1 9 2 2 14	16 - 17 Dept. Target Achived
Strate	gic Imperative 1: Academ	nics		
1.1	Diverse Programs & Student En	nrollment		
	Launch new and diverse programs	Diploma, PG Diploma, Certificate, On-line Programs, Executive programs - 3-6-12 months duration	5	1
1.1.a/b	Offer programs for diverse target groups - Corporate/NGOs/SMEs/Faculty/Non- Working Women/Engineering	Week-long Certification Program	4	2
	Students	Certification Course 2 Days (16 hrs) (Min 30 Participants)	1	1
1.1.c	Design programs to attracts high quality students	Launch of Business Analytics	1	0
11d	Increase enrollments in PhD	Phd Supervisorship -Anna University	9	7
1.1.0	programs	Anna University - Part-time PhD and 1 Full time PhD student to be enrolled in each centre	2	0
1.2	Curriculum		S. Sales	132
1.2.a	Design outcome-centric curricula	Meeting with Industry Mentors - 1 per semester	14	6
1.2.c	Create opportunities for entrepreneurial initiatives	Campus Start-up	1	OLLEGE
1.3	Pedagogy		131	AC 718
1.3.a	Strengthen Institutional structures & systems that promote pedagogical	Course Outcome Mapping	70%	4.9

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		innovations to enhance outcome centric learning	Adjunct Faculty from Industry	8	9
			Forums - One Event / Semester (Except 4 Sem)	11	9
			Symposiums/ Conferences - for Students One per Centre	5	0
			Global talks - Webinars / Skype Conference / GL	9	6
			Industry Focus Process Study by Students (IV)	22	15
			Course related Workshops for practical learning - One Workshop per subject per Semester	33	20
			Guest Lectures	43	42
			Certification courses for Students with external partners for KCT.BS	10	8
			Teaching excellence – Student Feedback	80%	4
			Centre Head or Srg. Faculty Review	80%	3.2
	1.3.d	Create a culture that supports teaching excellence	Course File Documentation (8 marks / course)	131	17
			Course Coordination Meetings - Start, Mid & Close (3 / Course)	45	20
			End semester result	90%	3.6
	1.3.e	Introduce meaningful assessment systems	New Assement methods Introduced	13	0
	1.4	Research			
	1.4.a	New initiatives to develop research	Research Scholars - Meeting Organised	10	0
		and scholarship synergies	Attendance of Faculty	60%	3
	1.4.b	Proposals for external grants	Proposal for Research through external grants -Govt. Bodies / Industry / NGO	10	11
	1.4.c	Encourage industry sponsored, socially relevant and real-time research	Industry sponsored research	9	1
			Students Project award - District / National	2	0
	1.4.d	Expand research opportunities for students	Research Papers Presented by Students in conferences	15	35
			Research Papers / Project Published by Students-Faculty	18	4

6. Proof of Process to fund students to attend programs

6. Honours Track

For students looking for a challenge over and above what their curriculum offers, the Honours Track offers an additional opportunities for students with higher than average performance. The Honours track certificate will be issued by the Department along with the Degree.

6.1 Eligibility for enrollment

Maximum registration/ batch	10
Minimum CGPA	8.0
Engagement of Extra & Co-curricular Activities	

Enrolled will be done after Term 1 in Semester who have CGPA 8.0 and have actively involved in co and extracurricular activities. A faculty committee will select if there are more than 10 student enrollments based on above criteria

6.2 To earn Honours Credentials

To earn the Honours Credentials, the enrolled students should have achieved the following at the end of the program

Cumulative CGPA at the end of every semester, all passed in I attempt, without any arrear/ malpractice	8.0
Extra Credits to be earned during the program (I -IV sem)	08
Paper presentation in conferences (1/Term 3 - 6)	03
Publications (1/year)	02
Volunteering in BS administration	20 Hrs
Designing of a new KCT.BS process/Program improvement (1/year)	02

6.3 Benefits for the students

Honours certificate given by KCT.BS along with the Degree, First preference for part-time jobs in KCT, First preference in placements, Sponsorships for events, conferences/ scholarships, Invitee for special meetings, discussions in KCT, Leadership roles in KCT.BS, Mentoring by Industry professionals, Job shadowing

7. Proof of Student registration for Ph. D

Name of student enrolling into higher education	Batch(UG 2016- 20,2015-19 and PG(ME/MBA-2017- 18,2018-19),MCA- 2017-20,2016-19)	Program graduated from	Name of institution joined	Name of pro admitted to
Gitanjali G	MBA - 14MBA041	MBA	KCT Business School	Ph.D
Indhujaa S	MBA - 14MBA103	MBA	KCT Business School	Ph.D





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Department of Electronics & Instrumentation Engineering

AY: 2016-17

15.07.2017

Action taken report - Teachers Feedback

S.No	Analysis	Action taken report
X.	Faculty asked for clarification on Internship at industries	HOD explained the internship offered in Yokogawa
X .	Students should publish a paper during their final year-Project	Informed the students that each project should end up with a journal paper.
3.	To include transient response, natural and forced response of RC and RL circuits in Circuit theory	Not included since the syllabus will become vast and difficult for the students to learn during second semester.
4.	To introduce interfacing and signal conditioning as a separate experiment in Transducer laboratory.	Interfacing and signal conditioning circuit is analysed for each experiment in U17EII3202 - Sensors and Measurements Course.

Prepared By,

V. Met-V. Manime Kalou AP/ELE **BoS** Coordinator

Approved By,

Bos Chairman P.

Proof for ATR point No. 1





Yokogawa India Limited

Regd. Office : Plot No. 96, Electronics City, Hosur Road Bangalore - 560 100. India

Tel : 0091-80-41586000 Fax: 0091-80-28521442



August 18th, 2016

To,

Dr. M. Ezhilarasi,

Professor & Head.

Department of Electronics and Instrumentation,

Kumaraguru College of Technology.

Subject: Project Internship starting from December 2016 to March 2017

Dear Sir/Madam,

This is with reference to subjected to **Project Internship** seeking permission to take up internship project work for Mr. Sandeep P student of your esteemed Institution as a part of academic requirement.

We are pleased to inform you that we will be providing him with an opportunity to undergo summer internship project from December 2016 to March 2017 at our Bangalore office.

Thanking you,

Regard

Sudhindra Poojary **Deputy Manager - Human Resources** Yokogawa India Limited Plot No.96, 3rd Cross, Hosur Road, Electronic City, Bangalore - 560 100.



Proof for ATR Point 2-Proceedings of the 2nd International Conference on Communication and Electronics Systems (ICCES 2017) IEEE Xplore Compliant - Part Number: CFP17AWO-ART, ISBN:978-1-5090-5013-0

An Overview of Power Generation and scope for Renewable Energy in India

Ms. Jeya Daisy I Assistant professor Department of EIE Kumaraguru College of Technology Coimbatore, India jeyadaisy.i.eie@kct.ac.in Ms.Manimekalai V Assistant professor Department of EIE Kumaraguru College of Technology Coimbatore, India manimekalai.v.eie@kct.ac.in Hari Prasaath S Student Department of EIE Kumaraguru College of Technology Coimbatore, India hariprasad.abi@gmail.com

Abstract— This paper provides an overview of the current scenario of power production and energy consumption in India. The data presented here provides an insight of the various means by which the Indian market can be utilized from ideas about Renewable energy and its counterparts.

Keywords—Renewable energy in India; power generation in India;

I. INTRODUCTION

India made its first power generation history in the year 1905 with the installation of a generating station for a tramway. Since then, India has been seen going uphill in the power production sector. Once after its Independence in 1947, India started with the passing of Electricity Supply Act (1948).Now, with the production of 1,423 TWh, India is termed as the third largest producer and fourth largest consumer of electricity in the world. In the world, the country also has the fifth largest installed capacity. Since independence, though power generation has grown more than 100-fold, growth in demand has been even higher due to accelerating economic activity.



II. MAJOR SOURCES OF POWER

With an electricity production of 1,160.1BU in the FY17 [1], India has a variety of means to produce electricity. The major sources of power generation in India are shown in Fig.1. *Fig1: Major power sources in India. All units in GW* [1]

A. Thermal Power

Thermal power is the largest source of power in India. Around 69% of the total energy consumed in India is provided by thermal power.

i)Coal:

With huge reserves of coal and lignite, as of July 2017, the total installed capacity of India was 194,552.9 MW.

- India uses almost 72% of its coal production in its electricity sector. With current capacity topping 90 MT, Coal benefaction industry has rapidly grown in India.
- The Gondwana coal used for production of electricity is of low calorific value and high ash content.[2]
- The coal used for production of electricity in India is of low calorific value GCV - 4500 Kcal/Kg whereas the quality elsewhere in the world is much better; e.g. GCV of Australian coal is 6500 Kcal/Kg approx.
- The natural fuel value of Indian coal is almost poor. On an average, the Indian power plants using India's coal supply consume about 0.7 kg of coal to generate one KWh, whereas United States thermal power plants consume about 0.45 kg of coal per kWh.[8]

ii)Natural Gas:

As of June 2017, the proven natural gas capacity in India accounts to 25,185.4MW.

- The plants operate at an overall PLF of above 25% due to the severe lack of natural gas supply to the country.
- Imported Liquefied Natural Gas (LNG) proved to be too expensive for power generation which results in the shutdown of these plants for most part of the year.[3]

Proceedings of the 2nd International Conference on Communication and Electronics Systems (ICCES 2017) IEEE Xplore Compliant - Part Number: CFP17AWO-ART, ISBN:978-1-5090-5013-0

B. Hydro Power

India's potential for Hydro power is high with quite a number of rivers and water bodies. The Darjeeling and Shivanasamudra power plants were the hydroelectric power plants to be established among the firsts in Asia.

- The economically viable and exploitable hydro potential in India is assessed to be about 84,000 MW which accounts for around 60% of the load factor.
- The present installed capacity accounts for 44.4MW approx. which is 13.5% of total electricity generation in India.
- They can also provide secondary or seasonal power at no additional cost when rivers are flooding with excess water and are stored in Pumped storage schemes during surplus which are very much cost effective than batteries or compressed air storage systems.[1],[2]

C. Nuclear power

As of March 2017, across 20 reactors, India produces 5.72GW of net electricity generation capacity using nuclear fuels and aims to increase the capacity to 45 GW by 2020.

- In India, nuclear power accounts for about 2.1% of the total power production. It uses a maximum of 18 Pressurized Heavy Water Reactors (PHWR) and 2 Boiling Water Reactors (BWR) among the 20 working ones.
- The Kudankulam Atomic power project, Tamil Nadu, by NPCIL is a major step towards increasing the production. In May 2016, Unit II of the plant has started functioning with an installed capacity of 1000 MW and is expected to produce 400MW in 45 days once it has attained criticality.

D. Renewable Energy

i)Solar Power

With solar radiation of about 5,000 trillion kWh per year incident over its land mass with average daily solar power potential of 0.25kWh/m², India's future in power production lays with solar energy.

- As of 31st January 2017, the installed capacity of 9GW meets 1% of the utility electricity generation.
- Installations of solar power plants require nearly 2.4 hectares (0.024 km²) land per MW capacity similar to coal-fired power plants. It has been estimated that 1.33 million MW capacity solar plants can be installed in India on its 1% land (32,000 square km).
- The part of waste lands (32,000 square km) when installed with solar power plants can produce 2,000 Billion Kwh of electricity (two times the total generation in the year 2013-14) with land annual productivity or yield of about One million per acre (i.e., at Rs.4/kWh) which is at par with many industrial areas and many times more than the best productive irrigated agricultural lands.[8]

- Moreover, the solar power plants are not dependent on the supply of any raw material and are self productive. And also there is unlimited scope for solar electricity to replace all fossil fuel energy requirements if all the meagerly productive lands are occupied by solar power plants in future. It has been estimated that the solar power potential of India can meet perennially to cater per capita energy consumption at par with USA or Japan for the peak population in its demographic transition.
- In May 2017, Indian solar power tariff has fallen to 2.44/kWh which is lower than any other type of power generation in India.
- In India, land acquisition is a challenge to solar farm projects. Some state governments are also exploring means to address land availability through innovation; for instance, by exploring means to deploy solar capacity above their extensive irrigation canal projects, thereby harvesting solar energy while reducing the loss of irrigation water by evaporation.
- In April 2012, the Gujarat canal solar power project as shown in Fig.2 was inaugurated which is being constructed over the River Narmada, completed, it would be 18,000Km long. Additional advantages of this project include: Non-requirement of land and Prevention water evaporation from the river.[3],[11]



Fig.2: Canal Solar Power Project, Gujarat

ii)Wind power

India has the fifth largest installed wind power capacity in the world and it is the largest source of renewable energy.

- As of 31 March 2016, the installed capacity of wind power was 26.74 GW, and a production of 46,011 million KWh in the year 2016-17 which is accounted for almost 3% of the total production.
- India aims to double its wind energy generation by the year 2022.[4]
- India also plans to produce offshore wind power, with a 100 MW demonstration plant located off the Gujarat coast under the project FO WIND (Facilitating Offshore Wind in India) led by Wind Energy Council (GWEC).
- Tamil Nadu is the largest wind power generating state which is accounting for nearly 30% of installed capacity, followed by Maharashtra and Gujarat .[8]

BU: Billion Units TWh: Terra Watt Hour GCV: Gross Calorific Value Proceedings of the 2nd International Conference on Communication and Electronics Systems (ICCES 2017) IEEE Xplore Compliant - Part Number: CFP17AWO-ART, ISBN:978-1-5090-5013-0

iii)Biomass energy

India's Biomass energy is the second largest source of renewable energy which is accounting for almost 12% of total installed capacity in renewable energy shows immense upside potential in the coming years.

- It is as much reliable as any renewable source and it is free of fluctuation and does not require storage as like solar power but it is not preferred over other energy sources due to the practical challenges faced, like the availability of biomass only for a short duration after harvest which lasts for 2-3 months in a year.
- Biogas is generated by directly combusting or anaerobically digesting the biomass in a closed landfill site as shown in Fig.3. This process gives out methane and carbon dioxide as byproducts in the ratio of 1:1. The waste generated after the process (Sludge) can be used as manure for the agricultural fields.



Fig3:Process of Bio Digestion

- India has the high potential of biomass of about 500 metric tons per year because of the high availability. An estimated amount of 17,500 MW power can be generated using the Biomass available and 5000 MW of additional power can be generated by the surplus availability which amounts to around 120–150 MT.
- A radical idea of collecting this surplus biomass from industries such as in the form of bagasse from sugar mills, which is estimated to be 550 in India, can amount to 4.5EJ of direct heat can be obtained from the Combined Heat Power Plants.[1],[8]

III. SCOPE FOR RENEWABLE ENERGY IN INDIA

As the world tries to move to a better and sustainable future, it is the responsibility of our country to keep up with the growing environment and it can be achieved only through Renewable energy.

The amount of coal deficit faced by India is shown in Fig.4



Fig.4: Demand vs. Production of coal in India

The amount of energy requirement in the forthcoming years 2021 and 2031 is predicted in the Table.1 and this will clearly show that renewable energy sources are our best hope.

Table: 1 Amount of energy requirement prediction

	With (% Energ	y Rise	With 3% Energy Pric Rise				
Year (20-)	Gross Generation (BKWh)	Per Capita Gross Generation	Installed Capacity Require- ment (MW)	Gross Generati- on (BKWh)	Per Capita Gross Genera- tion	Installed Capacity Requireme -nt (MW)		
'09	979.87	811.33	186429	979.87	811.33	186429		
·21	1537.28	1096.58	292481	1356.25	967.45	258038		
'31	2577.99	1679	490485	2057.70	1340.15	391495		

The Government of India funds a variety of campaigns and projects for research and development and implementation of renewable energy projects.

- On the Green environmental front, three coal power projects have been dropped in Odisha, Gujarat and Uttar Pradesh for funding the solar power projects anticipating the decline of solar power prices in the year 2018.[6]
- While Nuclear power can also prove as a promising energy source, it does not suit India's efforts toward a greener environment through all the climate change deals and the current project National Action Plan on Climate Change (NAPCC) which is a mix of both mitigation and adaptation measures.
- India has undertaken 24 initiatives to combat climate change under the areas of Science and Research, Policy Development, Policy Implementation, International Co-operation and Forestry.[6]

IV. CONCLUSION

The skyrocketing cost of fuel and the diminishing reserves have made all the people to look around for alternative fuel or energy sources. In this Paper, the current scenario of the

BU: Billion Units TWh: Terra Watt Hour GCV: Gross Calorific Value

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Proceedings of the 2nd International Conference on Communication and Electronics Systems (ICCES 2017) IEEE Xplore Compliant - Part Number: CFP17AWO-ART, ISBN:978-1-5090-5013-0

energy sectors of India and its problems have been discussed. With these insights, the research for alternative energy development of the promising (Solar & Biomass) energy sources can be boosted accordingly. And any further improvements on the current research will be followed up by the forthcoming papers.

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[4] Indian Wind Power – Magazine http://www.indianwindpower.com/publications.php

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[6] 'Green India - Working towards a better tomorrow' - Spotlight by ArchiveIndia.gov.

[7] 'A review on biomass energy resources, potential, conversionand policy in India' by Anil Kumar, Nitin Kumar Prashant, Baredar, Ashish Shukla, 21st May 2014 on Elsevier.

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U17EII3202

SENSORS AND MEASUREMENTS

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3	0	2	0	4

Course Outcomes (CO):

After Successful completion of this course, the students will be able to :

CO1: Describe the characteristics and construction details of different sensors.

CO2: Analyze suitable signal conditioning circuits for resistive, reactance and self generating sensors.

CO3: Explain the fundamental concepts and working principle of analog and digital meters.

CO4: Analyze the specification details for the given sensor/Instrument

CO5: Demonstrate the Calibration of temperature sensors and electrical meters like voltmeter and ammeter.

CO6: Evaluate a measurement system using sensor and signal conditioning circuits for an application.

Pre-requisite: --

COs		РО										P	PSO	
	POI	P02	PO3	P04	PO5	PO6	P07	P08	60d	P010	PO11	P012	PS01	PSO2
CO1	M	W										S	W	
CO2	S	S	M	M									S	100
CO3	M	W	here's a	N N N	No.	W		La sure				S		145
CO4	S	S	M	M	M		13 april 1			100			N. OSA	1
CO5	S	M	W	W	C. Standy		1.0			M	in ar	1 Stand	S	Ren an
CO6	S	S	M	M	128181		W		M		M	a based	1.02.6	HORN

Direct	Indirect
Continuous assessment test	Course Exit Survey
Model Lab Exam	
• End Semester Exam	
Assignments	
a	

Course Content:

INTRODUCTION TO SENSOR BASED MEASUREMENT SYSTEM: 4 Hours General concepts and terminology, Sensor classifications, Primary Sensors, Materials for Sensors, Microsensor Technology, and Specification details of sensors/ Instruments –static and dynamic.

RESISTIVE SENSORS AND SIGNAL CONDITIONING:

Potentiometers, Strain gauges, FSR, Resistive bendy sensors, RTDs, Thermistors, Magnetoresistors, LDRs, Resistive Hygrometers, Resistive Gas Sensors, Liquid Conductivity Sensors. Measurement of Resistance: Voltage Dividers, Wheatstone Bridge -Balance Measurements, Deflection Measurements.

64

10 Hours

REACTANCE VARIATION SENSORS AND SIGNAL CONDITIONING: 9 Hours

Capacitive Sensors - variable and differential. Inductive Sensors-Variable reluctance and eddy current sensors -LVDTs - Synchros, resolvers, and Inductosyn - Magnetoelastic and magnetostrictive sensor - Wiegand and pulse-wire sensors - Saturation-core (flux-gate) sensors - SQUIDs. AC Bridges - Signal Conditioner for LVDT - Specific Signal Conditioners for Capacitive Sensors - Resolver-to-Digital and Digital-to-Resolver Converters.

SELF-GENERATING SENSORS AND SIGNAL CONDITIONING:7 HoursThermoelectricSensors:Thermocouples, PiezoelectricSensors, PyroelectricSensors,PhotovoltaicSensors, ElectrochemicalSensors.Sensors,Sensors,

DIGITAL, INTELLIGENT AND OTHER SENSORS:

Position Encoders, Resonant Sensors, Variable Oscillators, Conversion to Frequency, Period, or Time Duration. Smart sensors. Sensors Based on Semiconductor Junctions, Sensors Based on MOSFET Transistors, Charge-Coupled and CMOS Image Sensors, Fiber-Optic Sensors, Ultrasonic-Based Sensors, Biosensors.

ANALOG AND DIGITAL METERS:

Moving iron- permanent magnet moving coil instruments, Measurement of DC, AC voltage and current, Hall effect clamp meter, power meter, Q-meter, Digital voltmeter, Digital multimeter, Timer/counter, time, phase and frequency measurements, oscilloscope and data loggers.

LIST OF EXPERIMENTS:

- 1 Introduction to simulation tools : Matlab and LabView
- 2. Reading data sheets of various sensors.
- 3. Practical verification of Strain gauge sensor specifications with the signal conditioning circuits.
- 4. Practical verification of RTD and Thermistor sensor specifications with the signal conditioning circuits.
- 5 Practical verification of Capacitive Sensors specifications with the signal conditioning circuits.
- 6 Practical verification of Hall efffect Sensors specifications with the signal conditioning circuits.
- 7 Practical verification of LVDT Sensors specifications with the signal conditioning circuits.
- 8 Practical verification of Magnetostrictive Sensors specifications with the signal conditioning circuits.
- 9 Practical verification of Thermocouple Sensors specifications with the signal conditioning circuits.
- 10 Practical verification of Piezoelectric Sensors specifications with the signal conditioning circuits.
- 11 Practical verification of Photovoltaic Sensors specifications with the signal conditioning circuits.
- 12 Study of Fiber-Optic Sensors, Position Encoders and Ultrasonic-Based Sensors
- 13 Calibrate voltmeter and an ammeter using Electrical calibration Test Bench
- 14 Calibrate RTD and Thermistor using Temperature Calibration Test Bench
- 15 Project Design and testing of a measurement system.

racucal nours: 50 Total nours: 75	Theory Hours : 45	Practical Hours : 30	Total Hours : 75	
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9 Hours

6 Hours

65

REFERENCE BOOKS:

- 1. Ramon Pallas-Areny, John G. Webster ,"Sensors and Signal Conditioning", John Wiley and Sons, 2nd Edition, 2001.
- 2. David A. Bell, "Electronic Instrumentation and Measurements", Oxford University Press, Third Edition, 2013.
- 3. Kalantar-zadeh, Kourosh "SENSORS An introductory course", Springer, 2013
- 4. Herman K.P. Neubert, "Instrument Transducers-An introduction to their performance and design", Oxford University Press, second Edition, 2011
- 5. E.A. Doebelin, 'Measurement Systems Applications and Design', Tata Mc Graw Hill, sixth edition, 2012.

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66



Department of Fashion Technology

AY: 2016-17

Action taken report –Faculty Feedback

Date : 15.07.2017

S.No	Analysis	Action taken report
1.	Open elective courses should be provided	Two open electives are provided form the design
	from fashion domain because if it is	domain.
	offered from technology domain, it is	
	difficult to understand by other department	
	students.	
2.	Industrial engineering should be offered as	It will be considered in the next regulation. The
	a core course.	course is provided as an elective.

PreparedBy,

BoS Coordinator

Approved By,

BoS Chairman

Sl.NO:1 : Open elective courses

U17FTOE06TEXTILE ARTS AND CRAFTS

Course Outcomes After successful completion of this course, the students should be able to

CO1	Summarize knowledge on design concepts and colour categories.	K2
CO2	Apply basic techniques in design development	K3
CO3	O3 Summarize skills on printing and painting techniques	
CO4	Summarize the knowledge on embroidery	K4
CO5	Apply knowledge on developing and printing, image mixing and printing.	K3
CO6	Explain the designing process in product development	K3

Course Assessment methods

Direct	Indirect
1. Internal tests	1. Course Exit Survey
2. Assignment	
3. Group Presentation	

Course Content Design concepts Hours

Design: structural, decorative and functional; Types- natural, stylized, geometric, historic, abstract design; Elements of Design; Principles of design, Application of elements and principles of design. Colour: Dimensions of colour, colour categories, and psychology, colour theories- Prang colour system and colour harmonies.

Design development Hours

Introduction & Overview of the traditional designs of India. Techniques: block printing, stencilling, screen printing, tie and dye, batik , Kalamkari, Painting. Embroidery: Basic hand stitches, composite stitches, traditional Indian embroidery.

Product development Hours

Designing Process:Forecasting, Design process – Innovation of practice, analyzing the brief, Research Inspiration – Research direction, prototyping.

Development process: planning a collection, designer boards and portfolio presentation for a product

Theory: 45 Hours

Total: 45 Hours

15

10

20

3 0 0 3

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REFERENCES

- 1. Kathryn McCelvey and Janine Munslow, —Fashion Design: Process, Innovation and Practicel, Blackwell Publishing, USA, 2005.
 - 2. HatanakaKokyo Collection --- Textile arts of India, Chronide Books, 1996
 - Elaine Stone, Jean A. Samples, Fashion Merchandising, McGraw-Hill Book Company 1985.
 - 4. RusselGillow and Nicholas Barnard, —Traditional Indian Textiles, Thames and Hudson Ltd., London, 1991.
 - 5. ParulBhatnagar, —Traditional Indian Costumes and Textiles, Abhishek Publications, Chandigarh, 2004.
 - 6. Jay Diamond and Ellen Diamond, —Fashion, Apparel, Accessories, Home Furnishings Pearson Prentice Hall, New Jersey, 2007.
 - 7. UshaSrikant, —Designs for a lifetime, Samata Enterprises, Mumbai, 2002.

U17FTOE07 HOME FURNISHING AND DECORATION FOR BEGINNERS

L	Т	Р	С
3	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1	Generalize knowledge about the varieties of home furnishing materials and	K3
	finishing methods	
CO2	Developing skills in the selection of different varieties of home furnishing	K4
	materials in terms of sizes, shapes and patterns and construction methods	
CO3	Analyze the knowledge on suitability of furnishings and coverings for living	K4
	room.	
CO4	Analyze the knowledge on suitability of various types of linens and its end	K4
	uses	
CO5	Analyze the knowledge on suitable care & maintenance of home furnishing	K4
	materials.	
CO6	Assess the varieties of home furnishing products and its end uses	K4

Course Assessment methods

Direct	Indirect
1. Internal tests	2.Course Exit Survey
2. Assignment	
3. Group Presentation	

Course Content Introduction Hours

Introduction of home decoration -types of home decoration, types of furniture and furnishing materials used in home. Window treatments - Doors and Windows – types. Window Treatment –. Curtains and Draperies

15

Floor covering and wall coverings Hours

Floor covering - types - Hard floor covering, resilient floor coverings, soft floor coverings - carpet, rugs, mats. Wall coverings- types

Bed and bath linen Hours

Bed linens – types – Bed linens – types – bed sheets, blankets, comforters, , bed spreads, mattress and pads, pillows and pillow covers. Care and Maintenance of bed linen. Kitchen linens – types - dish cloth, towels, fridge cover, grinder cover

Table Linen – Types - table mats, table cloth, hand towel, doilies, runners. Cleaning materials – wipes and mops. Care and maintenance of kitchen and table linen. Care and maintenance of home furnishing materials and its assessments.

Theory: 45 Hours

Total: 45 Hours

REFERENCES

- 1. Hamlym, "Bed and Table linen", Octopus Publishing Group Ltd, Newyork 2001.
- 2. David Holloway, "The Essential Book of Home Improvement Techniques", Marshals Publications, London, 2000.
- 3. Emma Callery, "The Home Decorator's Colour Source Book", Apple Press Ltd, London, 2006.
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- 7. James Merrell, "Living with Decorative Textiles, "Thames and Hudson ltd, London, 1995.
- 8. Caroline Lebea, "Fabrics the Decorative Art of Textiles", Thames and Hudson Ltd, London, 1994

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DEPARTMENT OF COMPUTER APPLICATIONS

AY: 2016-17

Date: 15.07.2017

ACTION TAKEN REPORT - TEACHERS

S.NO	ANALYSIS	ACTION TAKEN REPORT
1.	Data Structures can be offered in semester II instead of semester I.	P17CAT2101 Data Structures, was moved from Semester 1 to II Semester.
2.	Operating Systems can be moved to the III semester from I semester	Not incorporated, other BOS members felt that it has to be in I semester, So P17CAT1103 Operating Systems offered in I Semester.
3.	Linear Algebra can be added to the Numerical Methods in I semester and the title can also be changed.	The course renamed as P17MAT1101- Mathematics for Computer Applications.
4.	Accounting and Financial Management which is in I semester can be moved to IV semester to benefit the lateral entry students.	P17CAE0013 Accounting and Financial Management, moved to elective from core, as per the feedback from other BOS Members.
5.	Computer Organization and Architecture can be moved to I semester from the II semester.	P17CAT1002 Computer Organization, Moved to Semester I.

Prepared By,

BoS Coordinator

Approved By,

BoS Chairman

Proof for Action Taken 1:

SEMESTER-II

Course Code	Course Title	Course Mode I		Т	Р	J	С
P17CAT2101	Data Structures	Theory	3	1	0	0	4
P17CAT2002	Database Management System	Theory	3	0	0	0	3
P17CAT2103	Computer Networks	Theory	3	1	0	0	4
P17CAI2304	Software Engineering	Embedded Theory & Project	3	0	0	2	4
P17CAP2501	Data Structures Lab	Lab	0	0	4	0	2
P17CAP2502	DBMS Lab	Lab	0	0	4	0	2
P17ENP2502	Professional Skills I	Lab	0	0	2	0	1
		•	To	tal	Cred	its	20
Total Periods per week							26

Proof for Action Taken 2:

SEMESTER-I

Course Code	Course Title	Course Mode		Course Mode		Т	Р	J	С
P17CAT1001	Computational Thinking for Problem Solving	Theory	3	0	0	0	3		
P17CAT1002	Computer Organization	Theory	3	0	0	0	3		
P17CAT1103	Operating Systems	Theory	3	1	0	0	4		
P17HET1001	Empowering the Body and Enlightening 'the Mind	Theory	3	0	0	0	3		
P17MAT1101	Mathematics for Computer Applications	Theory	3	1	0	0	4		
P17ENI1601	English for Pragmatic Usage	Embedded Lab & Project	0	0	2	2	2		
P17CAP1501	Problem Solving Laboratory	Lab	0	0	4	0	2		
Total Credits 2							21		
Total Periods per week 2							25		

Proof for Action Taken 3:

SEMESTER-I

Course Code	Course Title	Course Mode	L	Т	Р	J	С
P17CAT1001	Computational Thinking for Problem Solving	Theory	3	0	0	0	3
P17CAT1002	Computer Organization	Theory	3	0	0	0	3
P17CAT1103	Operating Systems	Theory	3	1	0	0	4
P17HET1001	Empowering the Body and Enlightening 'the Mind	Theory	3	0	0	0	3
P17MAT1101	Mathematics for Computer Applications	Theory	3	1	0	0	4
P17ENI1601	English for Pragmatic Usage	Embedded Lab & Project	0	0	2	2	2
P17CAP1501	Problem Solving Laboratory	Lab	0	0	4	0	2
	Total Credits						
Total Periods per week 2							25

Proof for Action Taken 4 : Accounting and Financial Management course , moved to elective from core .

Code No.	Course Title	Course Type	L	Т	Р	J	С
P17CAE0001	Service Oriented Architecture	PE	3	0	0	0	3
P17CAE0002	Information Security	PE	3	0	0	0	3
P17CAE0003	Object Oriented Analysis and Design	PE	3	0	0	0	3
P17CAE0004	Game Development	PE	3	0	0	0	3
P17CAE0005	Software Project Management	PE	3	0	0	0	3
P17CAE0006	E- Commerce	PE	3	0	0	0	3
P17CAE0007	TCP/IPV6 Protocol Suite	PE	3	0	0	0	3
P17CAE0008	Digital Image Processing	PE	3	0	0	0	3
P17CAE0009	Wireless Networks	PE	3	0	0	0	3
P17CAE0010	Professional Ethics	PE	3	0	0	0	3
P17CAE0011	Domain Analytics	PE	3	0	0	0	3
P17CAE0012	Artificial Intelligence & Expert Systems	PE	3	0	0	0	3
P17CAE0013	Accounting and Financial Management	PE	3	0	0	0	3
P17CAE0014	Enterprise Resource Planning	PE	3	0	0	0	3
P17CAE0015	Managing Technical People	PE	3	0	0	0	3
P17CAE0016	Management Information System	PE	3	0	0	0	3

List of Program Electives

Proof for Action Taken 5: Computer Organization, Moved to Semester I.

SEMESTER-I

Course Code	Course Title	Course Mode	L	Т	Р	J	С
P17CAT1001	Computational Thinking for Problem Solving	Theory	3	0	0	0	3
P17CAT1002	Computer Organization	Theory	3	0	0	0	3
P17CAT1103	Operating Systems	Theory	3	1	0	0	4
P17HET1001	Empowering the Body and Enlightening 'the Mind	Theory	3	0	0	0	3
P17MAT1101	Mathematics for Computer Applications	Theory	3	1	0	0	4
P17ENI1601	English for Pragmatic Usage	Embedded Lab & Project	0	0	2	2	2
P17CAP1501	Problem Solving Laboratory	Lab	0	0	4	0	2
Total Credits 2							21
Total Periods per week							25



Department of Mechatronics Engineering

AY: 2016-17

Date:(5.11.16)

Action taken report -Faculty Feedback

S.No	Analysis	Action taken report
1.	Industry internships include in industrial preparedness program as one credit	Was not given as one credit but internship was allowed
2.	U15MCOE01 Robotics for engineers was modified as mobile robotics	Since already the title Mobile Robotics is in the core. It was not changed

Prepared By,

pont **BoS** Coordinator

Approved By,

RVel

BoS Chairman

Proof 2:`

Code No.	Course Title	Cate gory	Con tact Hou rs	L	Т	Р	с	Pre- requisites
THEORY								
U15MCE201	Machine Vision System	PE	3	3	0	0	3	
U15MCE202	Medical Mechatronics	PE	3	3	0	0	3	
U15MCE203	Digital Signal Processing	PE	3	3	0	0	3	
U15MCE204	Micro Electro Mechanical Systems	PE	3	3	0	0	3	
U15MCE205	Mobile Robotics	PE	<mark>3</mark>	<mark>3</mark>	<mark>0</mark>	<mark>0</mark>	<mark>3</mark>	

ELECTIVE II



Department of Mechanical Engineering

AY: 2016-17

Date: 15.07.2017

Teacher Feedback

- 1. It is recommended to offer Theory and Laboratory courses together as embedded in the next regulations.
- 2. The Human excellence courses may be modified as mandatory noncredit courses in the next regulations.

Prepared By,

Dr.M/Balaji

BoS Coordinator

Approved By,

V-RJCH_

Dr.V. Muthukumaran

BoS Chairman

Professor & Head Department of Mechanical Engineering Kumaraguru College of Technology Coimbatore-641 049.



Department of Mechanical Engineering

AY: 2016-17

Date: 15.07.2017

Teacher Feedback Analysis report

- 1. It is recommended to offer Theory and Laboratory courses together as embedded in the next regulations. Response: It is recommended to formulate embedded courses and pass in both theory and lab components is essential to successfully complete the course. This will be implemented in the next regulation.
- 2. The Human excellence courses may be modified as mandatory noncredit courses in the next regulations. Response: The faculty recommendation was taken and will applied in the next regulation.

Prepared By,

Dr.M.Balaji **BoS** Coordinator

Approved By,

V-Mithe

Dr.V. Muthukumaran

BoS Chairman Professor & Head Department of Mechanical Engineering Kumaraguru College of Tech. Coimbatore-641 049



Department of Mechanical Engineering

AY: 2016-17

Date: 15.07.2017

Action taken report -Teacher Feedback

S.No	Analysis	Action taken report
1.	It is recommended to offer Theory and Laboratory courses together as embedded in the next regulations.	In Regulation R2017 Embedded courses are introduced – for Mechanical Engineering program U17MEI3201 Metal cutting and computer aided manufacturing & U17MEI3202 Mechatronics courses were introduced.
2.	The Human excellence courses may be modified as mandatory non-credit courses in the next regulations.	It is agreed to make all the Human Excellence courses as mandatory non-credit courses in the approved curriculum and syllabus.

Prepared by,

Dr.M.Balaji

BoS coordinator

Approved By,

ten.V

Dr.V. Muthukumaran

BoS Chairperson

Professor & Head Department of Mechanical Engineering Kumaraguru College of Technology Coimbatore-641 049. Proof for Action taken : Point 1: In Regulation R2017 Embedded courses are introduced – for Mechanical Engineering program U17MEI3201 Metal cutting and computer aided manufacturing & U17MEI3202 Mechatronics courses were introduced.

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KUMARAGURU COLLEGE OF TECHNOLOGY, COIMBATORE – 641 049

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REGULATIONS 2017 B.E. MECHANICAL ENGINEERING CURRICULUM

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S. No	ලංකාශාලාල	Course Mile	Commission	CT	ß,	T	P	ป	ଓ	-Sifi Sifilingsi
1	U17MAT3101	Partial differential equations and Transforms	Theory	BS	3	1	0	0	4	
2	U17MEI3201	Metal Cutting and Computer Aided Manufacturing	Embedded- Theory & Lab	PC	3	0	2	0	4	
3	U17MEI3202	Mechatronics	Embedded - Theory & Lab	ES	2	0	2	0	3	
4	U17MET3003	Product Design and Development	Theory	ES	3	0	0	0	3.	
5	U17MET3004	Engineering Thermodynamics	Theory	PC	3	0	0	0	3	
6	U17INI3600	Engineering Clinic I	Project based course	ES	0	0	4	2	3	
7	U17VEP3503	FAMILY VALUES (Mandatory)	Practical course	HS	0	0	2	0	0	U17VEP2 502
Total Credits									20	
Total Contact Hours/week									25	

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U17MEI3201 METAL CUTTING AND COMPUTER AIDED MANUFACTURING

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3	0	2	0	4

Course outcomes

After successful completion of the course, the student would be able to

CO 1: Apply the fundamentals of metal cutting and cutting tool materials

- CO 2: Study the types of machine tools and working principles of machine tools
- CO 3: Apply principles of surface integrity in finishing processes and study gear manufacturing techniques
- CO 4: Apply the manufacturing activities inter relation with computers for plant operations
- CO 5: Apply the concept of Group Technology in computer aided manufacturing.
- CO 6: Apply system modeling tools in CIM and the fundamental concepts of data communications

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co	Programme Outcomes (POs)													
s	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2
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CO 4	М						М							S
CO 5	M						Μ		M	М				S
CO 6	М				М		М		М	М				S

Pre-requisite: Nil

Course Assessment methods:

 DIRECT

 1. Continuous Assessment Test I, II (Theory component)

 2. Assignment; Group Presentation, Project

 3. Demonstration etc (as applicable) (Theory component)

 4. Pre/Post - Experiment Test/Viva; Experimental Report for each Experiment (lab

 Component)

 5. Model Examination (lab component)

 6.End Semester Examination (Theory and lab components)

 INDIRECT

 1. Course-end survey

THEORY OF METAL CUTTING

Introduction to Metal Cutting Methods – Mechanics of Metal Cutting – Orthogonal – Oblique – Merchants' Circle Diagram – Details of Derivation – Chip Details – Heat Generation – Cutting Tool Life – Cutting Tool Nomenclature – Economics of tool life – Optimal cutting speed for productivity - Cutting tool Materials - Cutting fluids – Recent Developments and Applications-Dry Machining and High-Speed Machining

MACHINE TOOLS

7 Hours

Introduction to Lathe – Shaper – Planning – Milling – Drilling – Boring – Grinding – Honing – Working Principles – Operations – Working Holding Devices.

SURFACE FINISHING PROCESSES AND GEAR MANUFACTURING 8 Hours

Grinding Machines – Grinding wheel Specifications – Honing – Lapping – Tapping – Burnishing – Super Finishing – Surface Integrity concepts – Gear Manufacturing Processes – Gear cutting Gear Hobbing – Gear Shaping Machines – Manufacture of Spur – Helical – Bevel – Worm and Worm Wheel – Gear Finishing, Honing.

INTRODUCTION TO COMPUTER INTEGRATED MANUFACTURING 7 Hours

The meaning and origin of CIM- the changing manufacturing and management scene -External communication - islands of automation and software-dedicated and open systems- product related activities of a company- marketing engineering - production planning - plant operations - physical distribution- business and financial management.

GROUP TECHNOLOGY AND COMPUTER AIDED PROCESS PLANNING 7 Hours

Role of Group Technology in CAD/CAM integration - part families - classification and coding DCLASS, MICLASS and OPITZ coding systems-benefits of Group Technology Process planning - role of process planning in CAD/CAM integration - approaches to computer aided process planning -variant approach and generative approaches.

CIM IMPLEMENTATION AND DATA COMMUNICATION

8 Hours

System modeling tools -IDEF models - activity cycle diagram - CIM open system architecture (CIMOSA)- CIM architecture - Product data management-CIM implementation software- Open systems- manufacturing automation protocol and technical office protocol (MAP /TOP) Development of databases -database terminology- architecture of database systems-data modeling and data associations -relational data bases - database operators - advantages of data base and relational database.

Theory: 45	Tutorial: 0	Practical: 0	Project: 0	Total: 45 Hours
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INTEGRATED LAB EXPERIMENTS:

- 1. Spur Gear cutting using Milling machine
- 2. Dove tail machining using shaper machine
- 3. Cylindrical grinding and Surface grinding on given workpiece
- 4. Facing, plain and step turning and taper turning.
- 5. Single start V-Thread cutting and knurling.
- 6. Boring and internal thread cutting.
- 7. Manual part programming (using G and M codes) in CNC Lathe. Machining operations include turning facing, taper turning, and step turning (any two operations).
- 8. Machining operations include Linear and Circular interpolation, chamfering and grooving (any two operations).
- 9. Manual part programming (using G and M codes) in CNC Milling. Machining operations include Linear and Circular interpolation (contour motions).

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Practical: 30

Project: 0

Total: 75 hours

U17MEI3202

MECHATRONICS

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Course outcomes

After successful completion of the course, the students

should be able to CO 1: Explain mechatronics design

process and adaptive control systems CO 2: Discuss the working of various actuators

CO 3: Discuss the architecture of microprocessors.

CO 4: Discuss the architecture of PLC.

CO 5: Discuss the various case studies.

CO 6: Simulate Hydraulic and Pneumatic using software tool and trainer kit.

Pre-requisite: Nil

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CO		Programme Outcomes (POs)												
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Course Assessment methods:

DIRECT

Continuous Assessment Test I, II (Theory component)

Assignment; Group Presentation, Project

Demonstration etc (as applicable) (Theory component)

4. Pre/Post - Experiment Test/Viva; Experimental Report for each Experiment (lab Component) Model Examination (lab component)

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End Semester Examination (Theory and lab components)

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1. Course-end survey

INTRODUCTION TO MECHATRONICS

Introduction to Mechatronics – Conventional and Mechatronics approach in designing products mechatronics design process - Mechatronics in Manufacturing - Adaptive and distributed control systems – Modelling and simulation of mechatronics systems.

SENSORS AND ACTUATORS

Overview of sensors and transducers - Microsensors - Signal conditioning - Operational amplifiers - Protection - Filtering - Analog and Digital converters. Solenoids - Direct Current motors -- Servomotors -- Stepper motors -- BLDC Selection and application.

MICROPROCESSOR BASED CONTROLLERS 9 Hours

Architecture of microprocessor and microcontroller- Pin Configuration - Addressing Modes – Instruction set, Timing diagram of 8085.

PROGRAMMING LOGIC CONTROLLERS

Programmable Logic Controllers – Basic Structure – Input / Output Processing – Programming – Mnemonics – Timers, Internal relays and counters – Shift Registers - Master and Jump Controls - Data Handling - Analogs Input / Output - Selection of a PLC Problem – Application of PLCs for control.

CASE STUDIES

Pick and place robot - Automatic Car Park Systems - Automatic Camera -Automatic Washing Machine - Engine Management Systems.

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Theory: 45	Tutorial: 0	Practical: 0	Project: 0	Total: 45 Hours
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LIST OF EXPERIMENTS:

1. Simulation of basic Hydraulic, Pneumatic and Electric circuits using software.

- 2. Design and testing of circuits using basic pneumatic trainer kits.
- 3. Design and testing of circuits with logic sequence using Electro pneumatic trainer kits
- 4. Design and testing of sequential circuits in Electro pneumatic kit using PLC.

Theory: 0	Tutorial: 0	Practical: 30	Project: 0	Total: 30 Hours

9 Hours

9 Hours

9 Hours

9 Hours