



* G.S.B.T. *

GOJAN SCHOOL OF BUSINESS AND TECHNOLOGY

Approved by A.I.C.T.E. New Delhi & Affiliated to Anna University, Chennai

NAAC Accredited Institution | An ISO 9001:2015 Certified Institution

Recognized by UGC u/s 2(f) & 12(B) of the UGC Act

80 Feet Road, Edapalayam, Redhills, Chennai - 600 052.

2.6.1. Course Outcomes

B.E AERONAUTICAL ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Ability to solve the engineering problems of mathematics, science and engineering	K3
PO2	An engineering acumen in identifying, formulating, analyzing and solving complex engineering problems.	K4
PO3	Developing processes, solutions to the problems which are safe socially, culturally and environmentally.	K4
PO4	Ability to model, analyze and simulate operations of aircraft components and parts.	K6
PO5	Capability of exhibiting sound theoretical and practical knowledge in core domains like aircraft structures, aerodynamics and propulsion and are able to solve problems related to airflow over fixed and rotary wing aircrafts.	K2
PO6	Understanding of the impact of engineering solutions in a global, economic, environmental, and societal context	K2
PO7	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.	K6
PO8	Commitment to professional ethics and responsibilities and norms as prescribed by the Aviation bodies such as DGCA.	K2
PO9	Ability to work in team and have practical exposure in modeling of UAV, hovercrafts.	K3
PO10	Ability to communicate effectively with the aerospace community using reports, presentations and documentations.	K3
PO11	Ability to manage the projects in various aerospace fields of structure, propulsion, avionics.	K5
PO12	A readiness to engage in lifelong learning and understanding of contemporary issues in aviation industry.	K2

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES

COURSE CODE/ NAME :AE8401/AERODYNAMICS - 1

COs	Students Will Able To	Knowledge Level
CO 1	Describe incompressible flow	K2
CO 2	Apply Kutta Joukowski's theorem to calculate aerodynamic forces.	K3
CO 3	Apply airfoil theory to predict airfoil performance	K4
CO 4	Define subsonic wing theory	K4
CO 5	Explain and apply Boundary layer theory	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12
	K LEVEL	K3	K4	K4	K6	K2	K2	K6	K2	K3	K3	K5	K2
CO 1	K2	1	1	1		3							
CO 2	K3	2	3			3							
CO 3	K4	1	1		3	2							
CO 4	K4	2	2			3							
CO 5	K3	1	2		2	3							
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME : AE8402/AIRCRAFT SYSTEMS AND INSTRUMENTS

COs	Students Will Able To	Knowledge Level
CO 1	Compare the features of various flight control systems	K2
CO 2	Describe the principle and working of different aircraft systems	K2
CO 3	Define the principle and working of engine systems using compressed air and fluid	K2
CO 4	Analyse the performance of various aircraft engine systems	K2
CO 5	Interpret data from various aircraft instruments	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2					2					3		
CO 2	K2					3		2		1			
CO 3	K2											2	
CO 4	K2					3							
CO 5	K2						3	2					1
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME :AE8403/AIRCRAFT STRUCTURES - 1

COs	Students Will Able To	Knowledge Level
CO 1	Ability to perform linear static analysis of determinate and indeterminate aircraft structural components	K4
CO 2	Ability to design the component using different theories of failures	K3
CO 3	Calculate the response of statically indeterminate structures under various loading conditions	K4
CO 4	Calculate the reactions of structures using strain energy concept	K4
CO 5	Create a structure to carry the given load	K6
CO 6	Examine the structural failures using failure theories	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K4	2	3	3	1			1		1		1	
CO 2	K3	3	2	2	1					1		1	
CO 3	K4	3	3	2								1	
CO 4	K4	3	3	2								1	
CO 5	K6	2	3	1	3			3				2	
CO 6	K3	3	2	2								1	
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME :AE8404/PROPULSION - 1

COs	Students Will Able To	Knowledge Level
CO 1	To be able to understand the working and fundamentals of jet engines	K5
CO 2	To be able to describe the jet engine inlets and nozzles	K2
CO 3	To be able to understand the combustion process and combustion chambers used in jet engines	K2
CO 4	To be able to understand the working of jet engine compressors	K3
CO 5	To be able to understand the working of jet engine turbines	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K5	1	2			1							
CO 2	K2					3						1	
CO 3	K2					3						1	
CO 4	K3	3	2			3							
CO 5	K2					3						1	
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME :PR8451/MECHANICS OF MACHINES

COs	Students Will Able To	Knowledge Level
CO 1	Identify the principles in the formation of mechanism and their kinematics	K2
CO 2	Design and construct cam profile	K4
CO 3	Analyze the construction features of gears and gear trains	K4
CO 4	Identify the effect of friction in different machine elements	K3
CO 5	Analyze the importance of balancing	K4
CO 6	Apply governors and gyroscopic effects	K3
CO 7	Analyze the importance of vibration	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2	2	3										
CO 2	K4	2	3		1								
CO 3	K4	2	3		2								
CO 4	K3	2	3		1								
CO 5	K4	1	3										
CO 6	K3	1	3										
CO 7	K3	1	3			1							
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

B.E AERONAUTICAL ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Ability to solve the engineering problems of mathematics, science and engineering	K3
PO2	An engineering acumen in identifying, formulating, analyzing and solving complex engineering problems.	K4
PO3	Developing processes, solutions to the problems which are safe socially, culturally and environmentally.	K4
PO4	Ability to model, analyze and simulate operations of aircraft components and parts.	K6
PO5	Capability of exhibiting sound theoretical and practical knowledge in core domains like aircraft structures, aerodynamics and propulsion and are able to solve problems related to airflow over fixed and rotary wing aircrafts.	K2
PO6	Understanding of the impact of engineering solutions in a global, economic, environmental, and societal context	K2
PO7	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.	K6
PO8	Commitment to professional ethics and responsibilities and norms as prescribed by the Aviation bodies such as DGCA.	K2
PO9	Ability to work in team and have practical exposure in modeling of UAV, hovercrafts.	K3
PO10	Ability to communicate effectively with the aerospace community using reports, presentations and documentations.	K3
PO11	Ability to manage the projects in various aerospace fields of structure, propulsion, avionics.	K5
PO12	A readiness to engage in lifelong learning and understanding of contemporary issues in aviation industry.	K2

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES

COURSE CODE/ NAME: AE8601 – Finite Element Methods

COs	Students Will Able To	Knowledge Level
CO 1	Construct the flow chart of finite element steps and understand the convergence of the problem	K3
CO 2	Solve stiffness matrix for bar, beam and frame problems using suitable boundary condition.	K3
CO 3	Analyze 2d structures using Plane stress and plane strain conditions.	K3
CO 4	Solve 2d and 3d structures using isoparametric elements.	K3
CO 5	Apply the concepts of Numerical integration and finite element methods to solve fluid flow and heat transfer problems.	K3
CO 6	Analyze structures using the software packages and analytical techniques	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K3	3	2	1	1	1						1	
CO 2	K3	3	2	1	1	2						1	
CO 3	K3	3	3	2	2	2						1	
CO 4	K3	3	2	1	1	2						1	
CO 5	K3	3	2	1	1	2						1	
CO 6	K4	3	3	2	2	3	1	1	2	2		2	2
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME : AE8602/ Experimental Aerodynamics

COs	Students Will Able To	Knowledge Level
CO 1	Explain measurement techniques in aerodynamic flow	K2
CO 2	Describe wind tunnel measurement systems	K2
CO 3	Measure flow parameters like pressure, velocity	K4
CO 4	Explain measurements techniques involved in aerodynamic testing	K2
CO 5	Analyze the model measurements, lift and drag measurements through various techniques and testing of different models	K4
CO 6	Apply the wind tunnel boundary correction and scale effects	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2					3							
CO 2	K2					3							
CO 3	K4	1	1			2							
CO 4	K2	1	1			2							
CO 5	K4	2	2			3							
CO 6	K3	1	1		2	3							
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME: AE8603 –Composite Materials and Structures

COs	Students Will Able To	Knowledge Level
CO 1	Define the mechanics of composite materials	K3
CO 2	Analyse the laminated composites for various loading cases	K4
CO 3	Identify the manufacturing process of composites.	K2
CO 4	Analyze sandwich and laminated plates	K4
CO 5	Analysis and construct different composite techniques	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVEL	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K3	3	2									1	
CO 2	K4	2	3	1								1	
CO 3	K2					1	3						2
CO 4	K4	1	3	2	2							1	
CO 5	K4		3	2	2			1				1	
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME: AE8604/ Aircraft Design

COs	Students Will Able To	Knowledge Level
CO 1	To be able to understand the classifications and stages in airplane design	K2
CO 2	To be able to draw 3 view diagrams and to estimate component weights	K4
CO 3	To be able to understand power plants available and to select power plant for design aircraft	K4
CO 4	To be able to estimate wing, fuselage and emphanage design parameters	K2
CO 5	To be able to design landing gear and control surfaces	K6

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2			2				1					
CO 2	K4							2				2	
CO 3	K4		3			2		2				2	
CO 4	K2			1				1					
CO 5	K6		2			1		3					
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME : AE8605/ Experimental Stress Analysis

COs	Students Will Able To	Knowledge Level
CO 1	Define stress and strain measurements in loaded components	K2
CO 2	Analyse the strain gauge data under various loading condition by using gauge rosette method	K2
CO 3	Identify the usage of strain gauges and photo elastic techniques of measurement and Formulate and solve general 3-Dimensional problems of stress-strain analysis especially fundamental problems of elasticity	K4
CO 4	Explain brittle coating and moiré techniques for strain analysis	K3
CO 5	Experimentally evaluate the location and size of defect in solid and composite materials by using various Non-Destructive methods	K3
CO 6	Calculate stress and strain measurement using rosette analysis	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2	1				3							
CO 2	K2					2	2				2		
CO 3	K4	2	3			2						2	
CO 4	K3	2				2							
CO 5	K3	2				2	2						2
CO 6	K4	2										2	
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME : AE8002/ Aircraft General Engineering Maintenance and Practices

COs	Students Will Able To	Knowledge Level
CO 1	Explain about various ground systems for aircraft operation	K2
CO 2	Identify ground servicing of critical aircraft systems	K2
CO 3	Explain about the ground handling procedures and types of equipment with special maintenance	K3
CO 4	Define shop safety environment ,cleanliness in an aircraft materials shop	K2
CO 5	Analyze the FAA airworthiness regulations and check list involved in each inspection of aircraft	K4
CO 6	Define specification standards of aircraft hardware systems	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2								2		3		
CO 2	K2								2		3		3
CO 3	K3								2		3		3
CO 4	K2			3				2	3	2	3		
CO 5	K4								3		3		3
CO 6	K3								3		3		
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

B.E AERONAUTICAL ENGINEERING-- R2013

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Ability to solve the engineering problems of mathematics, science and engineering	K3
PO2	An engineering acumen in identifying, formulating, analyzing and solving complex engineering problems.	K4
PO3	Developing processes, solutions to the problems which are safe socially, culturally and environmentally.	K4
PO4	Ability to model, analyze and simulate operations of aircraft components and parts.	K6
PO5	Capability of exhibiting sound theoretical and practical knowledge in core domains like aircraft structures, aerodynamics and propulsion and are able to solve problems related to airflow over fixed and rotary wing aircrafts.	K2
PO6	Understanding of the impact of engineering solutions in a global, economic, environmental, and societal context	K2
PO7	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.	K6
PO8	Commitment to professional ethics and responsibilities and norms as prescribed by the Aviation bodies such as DGCA.	K2
PO9	Ability to work in team and have practical exposure in modeling of UAV, hovercrafts.	K3
PO10	Ability to communicate effectively with the aerospace community using reports, presentations and documentations.	K3
PO11	Ability to manage the projects in various aerospace fields of structure, propulsion, avionics.	K5
PO12	A readiness to engage in lifelong learning and understanding of contemporary issues in aviation industry.	K2

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES

COURSE CODE/ NAME: AE6801 – Wind Tunnel Techniques

COs	Students Will Able To	Knowledge Level
CO 1	Define principles of model testing	K1
CO 2	Describe types and functions of Wind tunnels	K2
CO 3	Interpret the calibration of Wind tunnel	K3
CO 4	Describe the conventional measurement techniques for Wind tunnel testing	K2
CO 5	Describe special Wind tunnel techniques	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K1	2				2	2						
CO 2	K2	1				3	3						1
CO 3	K3	3				2	2			1			1
CO 4	K2	2				2	2						1
CO 5	K2	2				2	1						1
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME : AE6015/ Rockets & Missiles

COs	Students Will Able To	Knowledge Level
CO 1	Classify rockets and missiles	K2
CO 2	Describe aerodynamic characteristics of rockets and missiles	K2
CO 3	Explain rocket motion in free space and gravitational field	K3
CO 4	Describe the staging of rockets and missiles	K2
CO 5	Control the rockets and missiles	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2	1			2	2							
CO 2	K2	1			2	2				1			
CO 3	K3	2			2	2							2
CO 4	K2	2			3	2				1			1
CO 5	K3	3			2	2				2			1
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH



GOJAN SCHOOL OF BUSINESS AND TECHNOLOGY

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Recognized by UGC u/s 2(f) & 12(B) of the UGC Act
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* G.S.B.T. *

DEPARTMENT OF CIVIL ENGINEERING

REGULATION - 17

PROGRAMME OUTCOMES (POs):

On successful completion of the programme,

1. Graduates will demonstrate knowledge of mathematics, science and engineering.
2. Graduates will demonstrate an ability to identify, formulate and solve engineering problems.
3. Graduate will demonstrate an ability to design and conduct experiments, analyze and interpret data.
4. Graduates will demonstrate an ability to design a system, component or process as per needs and specifications.
5. Graduates will demonstrate an ability to visualize and work on laboratory and multidisciplinary tasks.
6. Graduate will demonstrate skills to use modern engineering tools, software and equipment to analyze problems.
7. Graduates will demonstrate knowledge of professional and ethical responsibilities.
8. Graduate will be able to communicate effectively in both verbal and written form.
9. Graduate will show the understanding of impact of engineering solutions on the society and also will be aware of contemporary issues.
10. Graduate will develop confidence for self education and ability for life-long learning.

II YR – REG 17

SUBJECT CODE/ NAME: CE 8401/ CONSTRUCTION TECHNIQUES AND PRACTICES

COURSE OUTCOME

CO1: know the different construction techniques and structural systems.

CO2: Understand various techniques and practices on masonry construction, flooring, and roofing.

CO3: Plan the requirements for substructure construction

CO4: Know the methods and techniques involved in the construction of various types of super structures.

CO5: Select, maintain and operate hand and power tools and equipment used in the building construction sites.

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2		
CO1	K3	-	1	-		-	-	-	-	2	-		
CO2	K2	-	1	-		2	-	-	-	2	3		
CO3	K2	-	2	-		-	-	2	-	-	3		
CO4	K3	-	-	-		-	-	-	-	3	-		
CO5	K2	-	2	-		3	-	-	-	-	2		
			1.2			1		0.4		1.6	1.6		

SUBJECT CODE/ NAME: CE 8402/ STRENGTH OF MATERIALS II

COURSE OUTCOME

CO1: Determine the strain energy and compute the deflection of determinate beams, frames and trusses using energy principles.

CO2: Analyze propped cantilever, fixed beams and continuous beams using theorem of three moment equation for external loadings and support settlements.

CO3: Find the load carrying capacity of columns and stresses induced in columns and cylinders

CO4: Determine principal stresses and planes for an element in three dimensional state of stress and study various theories of failure.

CO5: Determine the stresses due to Unsymmetrical bending of beams, locate the shear center, and find the stresses in curved beams.

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2		
CO1	K3	1	1	-	2	-	-	-	-	-	-		
CO2	K2	-	1	-	2	2	-	-	-	-	3		
CO3	K2	2	2	-	-	-	-	-	-	-	3		
CO4	K3	-	-	-	1	-	-	-	-	-	-		
CO5	K2	-	2	-	-	3	-	-	-	-	2		
		0.6	1.2		1	1							1.6

SUBJECT CODE/ NAME: CE 8403 / APPLIED HYDRAULIC ENGINEERING**COURSE OUTCOME**

CO1: Apply their knowledge of fluid mechanics in addressing problems in open channels.

CO2: Able to identify a effective section for flow in different cross sections.

CO3: To solve problems in uniform, gradually and rapidly varied flows in steady state conditions

CO4: Understand the principles, working and application of turbines.

CO5: Understand the principles, working and application of pumps.

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2		
CO1	K3	2	2	-	1		-	2	1	2	2		
CO2	K2	2	2	-	1		-	2	1	3	2		
CO3	K2	3	2	-	1		-	1	1	1	2		
CO4	K3	2	2	-	1		-	2	2	2	2		
CO5	K2	1	2	-	1		-	3	0	2	2		
		2	2	-	1			2	1	2	2		

SUBJECT CODE/ NAME: CE 8491/ SOIL MECHANICS**COURSE OUTCOME**

CO1 classify the soil and assess the engineering properties, based on index properties.

CO2: Estimate the stress concepts in soils

CO3:Examine and identify the settlement in soils.

CO4: Determine the shear strength of soil •

CO5: Analyze both finite and infinite slopes.

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2		
CO1	K3	2	0	2			-	-	-	-	-		
CO2	K2	2	2	1			-	-	2	-	-		
CO3	K2	2	-	-			1	-	-	-	-		
CO4	K3	1	-	1			-	-	-	2	-		
CO5	K2	2	-	1			-	1	-	-	2		
		1.8	0.4	1			0.2	0.2	0.4	0.4	0.4		

SUBJECT CODE/ NAME: CE8404/ CONCRETE TECHNOLOGY**COURSE OUTCOME**

CO1: The various requirements of cement, aggregate and water for making concrete

CO2: The effect of admixtures on properties of concrete.

CO3: The concept and procedure of mix design as per IS method

CO4: The properties of concrete at fresh and hardened state.

CO5: The importance and application of special concrete.

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K2	1	1		1			1	1	1	1		
CO2	K1	1	1		1			-	-	1	1		
CO3	K3	2	2		2			1	1	1	-		
CO4	K3	1	1		1			1	1	-	-		
CO5	K2	1	1		-			-	1	1	-		
		1.2	1.2		1			0.6	0.8	0.8	0.4		

III YR – REG 17

SUBJECT CODE/ NAME: CE 8601 / DESIGN OF STEEL STRUCTURAL ELEMENTS

COURSE OUTCOME

CO1: Understand the concepts of various design philosophies

CO2: Design common bolted and welded connections for steel structure

CO3: Design tension members and understand the effect of shear lag.

CO4: Understand the design concept of axially loaded columns and column base connections

CO5: Carry Understand specific problems related to the design of laterally restrained and unrestrained steel beams.

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2		
CO1	K2	2	1	-	-	2	-	-	-	-	-	-	-
CO2	K4	3	3	2	2	3	-	-	-	-	-	-	-
CO3	K2	2	1	-	-	2	-	-	-	-	-	-	-
CO4	K3	3	2	1	1	3	-	-	-	-	-	-	-
CO5	K2	2	1	-	-	2	-	-	-	-	-	-	-
		2.4	1.6	0.6	0.6	2.4	-	-	-	-	-	-	-

SUBJECT CODE/ NAME: CE 8602/ STRUCTURAL ANALYSIS II

COURSE OUTCOME

CO1: Draw influence lines for statically determinate structures and calculate critical stress resultants.

CO2: Understand Muller Breslau principle and draw the influence lines for statically indeterminate beams.

CO3: Analyse of three hinged, two hinged and fixed arches.

CO4: Analyse the suspension bridges with stiffening girders

CO5: Understand the concept of Plastic analysis and the method of analyzing beams and rigid frames.

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2		
CO1	K3	1	1	1	2	-	-	-	-	1	-		
CO2	K2	-	1	-	2	2	-	-	-	-	3		
CO3	K2	2	2	2	-	-	-	-	-	2	3		
CO4	K3	-	-	-	1	-	-	-	-	-	-		
CO5	K2	-	2	2	-	3	-	-	-	-	2		
		0.6	1.2	1	1	1				0.6	1.6		

SUBJECT CODE/ NAME: CE 8603/ IRRIGATION ENGINEERING**COURSE OUTCOME**

CO1: Have knowledge and skills on crop water requirements.

CO2: Express the methods and management of irrigation.

CO3: Gain knowledge on types of Impounding structures

CO4: Indicate methods of irrigation including canal irrigation.

CO5: Get knowledge on water management on optimization of water use.

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2		
CO1	K3	3	0	1			-	-	-	-	-		
CO2	K2	2	-	1			-	-	-	-	-		
CO3	K2	2	-	-			-	-	-	-	-		
CO4	K3	2	-	2			-	-	-	-	-		
CO5	K2	1	-	1			-	-	-	-	-		
		2		1									

SUBJECT CODE/ NAME: CE 8604/ HIGHWAY ENGINEERING**COURSE OUTCOME**

CO1: Know about the concept of highway planning and alignment.

CO2: Explain the geometric design of highways.

CO3: Prepare the design of flexible and rigid pavements.

CO4: Explain the importance of highway materials and its testing.

CO5: Solves the pavement repair and summarize the PMS.

CO6: Explain the importance of highway in the country and how to utilize that one.

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO2	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO3	K3	3	2	1	-	-	1	-	-	-	-	-	-
CO4	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO5	K3	3	2	1	-	-	1	-	-	-	-	-	-
CO6	K2	2	1	-	-	-	-	-	-	-	-	-	-
		2.8	1.3	0.6			0.6						

SUBJECT CODE/ NAME: EN 8592/WASTE WATER ENGINEERING**COURSE OUTCOME**

CO1: An ability to estimate sewage generation and to design the sewerage system.

CO2: To identify required the characteristics and composition of sewage, Self- purification of stream.

CO3: An ability to perform basic design of the unit operation and processes that are used in sewage treatment.

CO4: To classify the standard method for disposal of sewage.

CO5: Gain knowledge on sludge treatment and disposal.

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K2	2	1	-	-	-	0	2	-	-	-	-	-
CO2	K1	2	1	-	-	-	1	2	-	-	-	-	-
CO3	K3	3	2	-	-	-	0	0	-	-	-	-	-
CO4	K3	3	2	-	-	-	0	0	-	-	-	-	-
CO5	K2	2	1	-	-	-	1	2	-	-	-	-	-
				-	-	-			-	-	-	-	-
		2.4	1.4		-	-	-	1.2		-	-	-	-

SUBJECT CODE/ NAME: CE 8005 / AIR POLLUTION AND CONTROL ENGINEERING**COURSE OUTCOME**

CO1: an understanding of the nature and characteristics of air pollutants, noise pollution and basic Concepts of air quality management

CO2: Ability to identify, formulate and solve air and noise pollution problems

CO3: Ability to design stacks and particulate air pollution control devices to meet applicable Standards.

CO4: Ability to select control equipment's

CO5: Ability to ensure quality, control and preventive measures

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2		
CO1	K3	3	-	1	1	-	-	-					
CO2	K2	3	3	3	3	-	1	2					
CO3	K2	3	-	3	1	-	3	3					
CO4	K3	3	-	1	1	-	2	2					
CO5	K2	3	-	1	1	-	1	1					
		3	0.6	1.8	1.4		1.4	1.6					

IV YR – REG13

SUBJECT CODE/ NAME: CE6016/ PREFABRICATED STRUCTURES

COURSE OUTCOME

- CO1: Explain the Standardization and System of Prefabricated Elements.
- CO2: Interpret the Behavior of Prefabricated Structural Components.
- CO3: Explain the design Principles as per codal provisions.
- CO4: Distinguish the joints for different structural connections.
- CO5: Apply the codal provisions for predicting Equivalent design loads.

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2		
CO1	K2	2	1	-	-	-	-	-	-	-	-		
CO2	K2	2	1	-	-	-	-	-	-	-	-		
CO3	K2	2	1	-	-	-	-	-	-	-	-		
CO4	K2	2	1	-	-	-	-	-	-	-	-		
CO5	K3	3	2	-	-	-	-	-	-	-	-		
		2.2	1.2										

SUBJECT CODE/ NAME: MG6851/ PRINCIPLES OF MANGEMENT

COURSE OUTCOME

- CO1: Extract the basic knowledge about the management.
- CO2: Know about the nature and purpose of planning and process of planning.
- CO3: Know the nature and purpose of the organization and human resource planning.
- CO4: Extract the idea about the motivational techniques and leadership.
- CO5: Develop the budgetary and non-budgetary control techniques.
- CO6: Gain complete knowledge on management, organization/leadership qualities.

CO - PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2		
CO1	K3	3	-	-	-	-	-	-	-	-	1	-	
CO2	K2	2	-	-	-	-	-	-	-	-	-	-	
CO3	K3	2	-	-	-	-	-	-	-	-	-	-	
CO4	K2	2	-	-	-	-	-	-	-	-	-	-	
CO5	K3	3	-	-	-	-	-	-	-	-	1	-	
CO6	K3	3	-	-	-	-	-	-	-	-	1	-	
		2.5									0.5		

SUBJECT CODE/ NAME: CE6021/REPAIR AND REHABILITATION OF STRUCTURES**COURSE OUTCOME**

CO1: Predict the strength and durability of existing concrete structures.

CO2: Identify and use the materials available for repair work in the construction.

CO3: Apply the latest techniques in the repair.

CO4: Apply various rehabilitation and retrofitting techniques.

CO5: Choose the suitable techniques for repair and demolition process.

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K2	2	1	-	-	-	0	-	-	-	-	-	-
CO2	K2	2	1	-	-	-	0	-	-	-	-	-	-
CO3	K3	3	2	-	-	-	1	-	-	-	-	-	-
CO4	K3	3	2	-	-	-	1	-	-	-	-	-	-
CO5	K3	3	2	-	-	-	1	-	-	-	-	-	-
		2.6	1.6				0.6						

B.E COMPUTER SCIENCE AND ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations	K5
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions	K5
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K5
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice	K4
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	K3
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K2
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments	K3
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME :CS8491/Computer Architecture		
COs	Students Will Able To	Knowledge Level
CO 1	Identify the basic organisation of computer system and performance of a computer system	K2
CO 2	Solve arithmetic operations and represent the floating point numbers in IEEE standard formats	K3
CO 3	Compare and contrast the non-pipeline and pipeline data path implementation of MIPS	K4
CO 4	Identify parallel processing challenges , hardware multithreading and multicore architecture	K2
CO 5	Examine the performance of memory and I/O systems	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO 1	K2	2	1	1	1	-	-	-	-	-	-	-	-
CO 2	K3	3	2	1	2	-	-	-	-	-	-	-	-
CO 3	K4	3	3	2	2	-	-	-	-	-	-	-	-
CO 4	K2	2	1	1	1	-	-	-	-	-	-	-	-
CO 5	K4	3	3	2	2	-	-	-	-	-	-	-	-
Avg CO/PO		3	2	1	2	-	-	-	-	-	-	-	-
COURSE CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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B.E COMPUTER SCIENCE AND ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations	K5
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions	K5
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K3K5K6
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice	K4
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	K3
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K2
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments	K3
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES

COURSE CODE/ NAME : CS8492 / DATABASE MANAGEMENT SYSTEM

COs	Students Will Able To	Knowledge Level
CO 1	Discuss the fundamental concepts of relational database and SQL	K2
CO 2	Use ER model for Relational model mapping to perform database design effectively	K3
CO 3	Summarize the properties of transactions and concurrency control mechanisms	K2
CO 4	Outline the various storage and optimization techniques	K2
CO 5	Compare and contrast various indexing strategies in different database systems	K2
CO 6	Explain the different advanced databases	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/C O K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 2	K3	3	2	2	-	-	-	-	-	-	-	-	-
CO 3	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 4	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 5	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 6	K2	2	1	1	-	-	-	-	-	-	-	-	-
Avg CO/PO		2	1	1									
Course CO/PO													

1- LOW

2- MEDIUM

3- HIGH

B.E COMPUTER SCIENCE AND ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	K5
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	K5
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K3/K5/K6
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	K4
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	K3
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions	K2
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	K3
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES

COURSE CODE/ NAME : CS8451 / Design and Analysis of Algorithms

COs	Students Will Able To	Knowledge Level
CO 1	Design algorithms for various computing problems.	K2
CO 2	Explain the Brute Force method and Divide and Conquer method to solve computing problems and analyze the time and space complexity of algorithms.	K2
CO 3	Explain the dynamic programming and greedy techniques to solve computing problems and analyze the time and space complexity of algorithms.	K2
CO 4	Describe how scientific problems can be solved using iterative method and how to cope with limitations of algorithm power.	K2
CO 5	Critically analyze the different algorithm design techniques for a given problem.	K3
CO 6	Modify existing algorithms to improve efficiency.	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/C O	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVE L	K3	K4	K5	K5	K3/K5/K 6	K4	K2	K3	K3	K2	K3	K3
CO 1	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 2	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 3	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 4	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 5	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO 6	K3	3	2	1	-	-	-	-	-	-	-	-	-
Avg CO/PO		2	1	1	-	-	-	-	-	-	-	-	-
COURSE CO/PO													

1- LOW

2- MEDIUM

3- HIGH

B.E COMPUTER SCIENCE AND ENGINEERING -- R2017

Program outcomes		Knowledge Level
PO1	Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	K3
PO2	Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	K4
PO4	Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	K5
PO5	Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K5
PO6	The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	K4
PO7	Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	K3
PO9	Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K2
PO11	Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	K3
PO12	Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME :CS8493 OPERATING SYSTEMS		
COs	Students Will Able To	Knowledge Level
CO 1	Discuss the overall view of the computer system and operating system	K2
CO 2	Identify various scheduling algorithm and deadlock prevention and avoidance algorithm	K4
CO 3	Compare and contrast various memory management schemes and file system functionalities	K2
CO 4	Discuss the performance of the various page replacement algorithms and interpret the file system implementation, sharing and protection mechanisms	K4
CO 5	Demonstrate administrative tasks on Linux servers and to be familiar with the basics of Mobile OS.	K3
CO 6	Compare iOS and Android Operating System .	

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K4	K5	K5	K4	K2	K3	K3	K2	K3	K3
CO 1	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 2	K4	2	1	1	-	-	-	-	-	-	-	-	-
CO 3	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 4	K4	2	1	1	-	-	-	-	-	-	-	-	-
CO 5	K3	3	2	2	-	-	-	-	-	-	-	-	-
CO 6	K2	3	2	2	-	-	-	-	-	-	-	-	-
Avg CO/PO		2	1	1	-	-	-	-	-	-	-	-	-
Course CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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B.E COMPUTER SCIENCE AND ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations	K5
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions	K5
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K3K5K6
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice	K4
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	K3
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K2
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments	K3
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME :CS8494 / SOFTWARE ENGINEERING		
COs	Students Will Able To	Knowledge Level
CO 1	Identify the key activities in managing a software project and recognize different process model	K2
CO 2	Explain the concepts of requirements engineering and Analysis Modeling.	K2
CO 3	Outline the systematic procedures for software design and deployment.	K2
CO 4	Compare various testing and maintenance methods	K2
CO 5	Interpret the project schedule, estimate project cost and effort required	K2
CO 6	Develop a software using the software engineering principles	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K5	K5	K3\K5\K6	K4	K2	K3	K3	K2	K3	K3
CO 1	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 2	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 3	K2	3	2	2	-	-	-	-	-	-	-	-	-
CO 4	K2	3	2	2	-	-	-	-	-	-	-	-	-
CO 5	K2	3	2	2	-	-	-	-	-	-	-	-	-
CO 6	K3	3	2	2	-	-	-	-	-	-	-	-	-
Avg CO/PO		3	2	2		-	-	-	-	-	-	-	-
Course CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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B.E COMPUTER SCIENCE AND ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations	K5
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions	K5
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K3K5K6
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice	K4
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	K3
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K2
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments	K3
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME :CS8691 / ARTIFICIAL INTELLIGENCE		
COs	Students Will Able To	Knowledge Level
CO 1	List the characteristics and types of intelligent agents	K2
CO 2	Interpret search algorithms for any AI problem	K2
CO 3	Illustrate a problem using first order and predicate logic	K2
CO 4	Explain the appropriate agent strategy to solve a given problem	K2
CO 5	Develop software agents to solve a problem.	K2
CO6	Demonstrate applications for NLP that use Artificial Intelligence	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K5	K5	K3\K5\K6	K4	K2	K3	K3	K2	K3	K3
CO 1	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 2	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 3	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 4	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 5	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 6	K2	2	1	1	-	-	-	-	-	-	-	-	-
Avg CO/PO		2	1	1		-	-	-	-	-	-	-	-
Course CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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B.E COMPUTER SCIENCE AND ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	K5
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	K5
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K3/K5/K6
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	K4
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	K3
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions	K2
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	K3
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES

COURSE CODE/ NAME : CS8602 / COMPILER DESIGN

COs	Students Will Able To	Knowledge Level
CO 1	Explain a lexical analyser for a sample language	K2
CO 2	Illustrate the different parsing algorithms to develop the parsers	K2
CO 3	Categorize the syntax-directed translation and run-time environment.	K2
CO 4	Summarize the intermediate code generation and run-time environment	K2
CO 5	Implement the techniques for programming construct using code optimization	K3
CO 6	Examine a scanner and a parser using LEX and YACC tools.	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/C O	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVE L	K3	K4	K5	K5	K3/K5/K 6	K4	K2	K3	K3	K2	K3	K3
CO 1	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 2	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 3	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 4	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 5	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO 6	K3	3	2	1	-	-	-	-	-	-	-	-	-
Avg CO/PO		2	1	1	-	-	-	-	-	-	-	-	-
COURSE CO/PO													

1- LOW

2- MEDIUM

3- HIGH

B.E COMPUTER SCIENCE AND ENGINEERING-- R2017

Program outcomes		Knowledge Level
PO1	Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	K3
PO2	Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	K4
PO4	Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	K5
PO5	Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K5
PO6	The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	K4
PO7	Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	K3
PO9	Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K2
PO11	Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	K3
PO12	Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME :CS8603/DISTRIBUTED SYSTEMS		
COs	Students Will Able To	Knowledge Level
CO 1	Elucidate the foundations and issues of Distributed Systems	K2
CO 2	Discuss the various synchronization issues and global state for distributed systems.	K2
CO 3	Comprehend the Mutual Exclusion and Deadlock detection algorithms in distributed systems	K3
CO 4	Show the use of agreement protocols and fault tolerance mechanisms in distributed systems	K2
CO 5	Relate the features of peer-to-peer and distributed shared memory systems	K2
CO6	Interpret the real-time distributed system applications	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K4	K5	K4	K4	K2	K3	K3	K2	K3	K3
CO 1	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 2	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 3	K3	2	2	2	-	-	-	-	-	-	-	-	-
CO 4	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 5	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 6	K2	2	1	1	-	-	-	-	-	-	-	-	-
Avg CO/PO		2	1	1									
COURSE CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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B.E COMPUTER SCIENCE AND ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations	K5
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions	K5
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K3K5K6
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice	K4
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	K3
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K2
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments	K3
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME :CS8651 / INTERNET PROGRAMMING		
COs	Students Will Able To	Knowledge Level
CO 1	Demonstrate simple website using HTML and CSS.	K2
CO 2	Build dynamic web pages with validation using Java Script objects and apply different event handling mechanisms.	K3
CO 3	Illustrate server side programs using Servlet and JSP.	K2
CO 4	Demonstrate simple web pages in PHP and to represent data in XML format.	K2
CO 5	Illustrate AJAX and web services to develop interactive web applications.	K2
CO6	Develop interactive web applications for real world problems.	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/C O	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVE L	K3	K4	K5	K5	K3K5K 6	K4	K2	K3	K3	K2	K3	K3
CO 1	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 2	K3	3	2	2	1	-	-	-	-	-	-	-	-
CO 3	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 4	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 5	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 6	K3	3	2	2	1	-	-	-	-	-	-	-	-
Avg CO/PO		2	1	1	1	-	-	-	-	-	-	-	-
Course CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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B.E COMPUTER SCIENCE AND ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	K5
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	K5
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K3/K5/K6
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	K4
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	K3
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions	K2
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	K3
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME : CS8601 / MOBILE COMPUTING		
COs	Students Will Able To	Knowledge Level
CO 1	Understand the basic concepts of mobile computing	K2
CO 2	Explain the basics of mobile telecommunication systems	K2
CO 3	Illustrate the generations of telecommunication systems in wireless networks	K2
CO 4	Determine the functionality of MAC, network layer and Identify a routing protocol for a given Ad hoc network	K2
CO 5	Explain the functionality of Transport and Application layers	K2
CO 6	Develop a mobile application using android/blackberry/ios/Windows SDK	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO 1	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 2	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 3	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 4	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 5	K2	2	1	1	-	-	-	-	-	-	-	-	-
CO 6	K3	3	2	1	-	-	-	-	-	-	-	-	-
Avg CO/PO		2	1	1	-	-	-	-	-	-	-	-	-
COURSE CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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B.E COMPUTER SCIENCE AND ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations	K5
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions	K5
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K3K5K6
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice	K4
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development	K2
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice	K3
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K2
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments	K3
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME : IT8076 / SOFTWARE TESTING		
COs	Students Will Able To	Knowledge Level
CO 1	Design test cases suitable for a software development for different domains.	K2
CO 2	Identify suitable tests to be carried out.	K2
CO 3	Prepare test planning based on the document.	K2
CO 4	Document test plans and test cases designed.	K2
CO 5	Use automatic testing tools.	K2
CO6	Develop and validate a test plan.	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO LEVEL	PROGRAM OUTCOMES												
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	
		K3	K4	K5	K5	K3\K5\K6	K4	K2	K3	K3	K2	K3	K3	
CO 1	K2	2	1	1	-	-	-	-	-	-	-	-	-	
CO 2	K2	2	1	1	-	-	-	-	-	-	-	-	-	
CO 3	K2	3	2	2	-	-	-	-	-	-	-	-	-	
CO 4	K2	3	2	2	-	-	-	-	-	-	-	-	-	
CO 5	K2	3	2	2	-	-	-	-	-	-	-	-	-	
CO 6	K3	3	2	2	-	-	-	-	-	-	-	-	-	
Avg CO/PO		2	2	2		-	-	-	-	-	-	-	-	
Course CO/PO														

1- LOW	2- MEDIUM	3- HIGH
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**DEPARTMENT OF ECE
REGULATION 2017**

B.E ECE - COURSE OUTCOMES (CO)

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	K4
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	K6
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	K2
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	K2
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for, sustainable development.	K6
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	K2
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K3
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	K5
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K2

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME : MA8451 / PROBABILITY AND RANDOM PROCESS		
COs	Students Will Able To	Knowledge Level
CO 1	The fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon.	K4
CO 2	The basic concepts of one and two dimensional random variables and apply in engineering applications.	K3
CO 3	Apply the concept random processes in engineering disciplines.	K3
CO 4	Apply the concept of correlation and spectral densities.	K3
CO 5	The students will have an exposure of various distribution functions and help in acquiring skills in handling situations involving more than one variable. Able to analyze the response of random inputs to linear time invariant systems.	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K5	K5	K3	K4	K2	K3	K3	K2	K3	K3
CO 1	K4	3	3	2	2	3						3	3
CO 2	K3	3	2	1	1	3						3	3
CO 3	K3	3	2	1	1	3						3	3
CO 4	K3	3	2	1	1	3						3	3
CO 5	K4	3	3	2	2	3						3	3
Avg. CO/PO		3	2	1	1	3						3	3
Course Avg. CO/PO		3.2											

COURSE OUTCOMES

COURSE CODE/ NAME: EC8451 Electromagnetic Fields

COs	Students Will Able To	Knowledge Level
CO 1	Define and recognize different co-ordinate systems	K1
CO 2	Estimation of electric fields on various material	K3
CO 3	Estimation of magnetic fields on various material	K3
CO 4	Apply and Analyze Maxwell's equations in point and intergal form	K3
CO 5	Analysis the nature of electromagnetic wave propagation in various medium	K2
CO 6	Boundary in conductor and dielectric in plane wave	K3

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K1	1	-	-	-	1	-	-	-	-	-	-	-
CO2	K3	3	2	1	1	3	-	-	-	-	-	-	-
CO3	K3	3	2	1	1	3	-	-	-	-	-	-	-
CO4	K3	3	2	1	-	3	-	-	-	-	-	-	-
CO5	K2	3	2	1	1	2	-	-	-	-	-	-	-
CO6	K3	3	2	1	-	1	-	-	-	-	-	-	-

B.E ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome(CO) Students will be able to	Knowledge Level
Environmental Science and Engineering		CO1: Understand the values, threats, conservation of biodiversity and classify various Ecosystems.	K2
		CO2: Explain the issues of scientific, social and economic environmental problem	K2
		CO3: Develop and implement technological and economical solution to environmental pollution	K3
		CO4: Apply the solutions for environmental issues	K3
		CO5: Develop the knowledge on various natural resources, their causes and their effects	K3
		CO6: Infer the importance of environment by accessing the human world	K2
		CO7: Explain various environmental acts and disaster management	K2
		CO8: Explain the dynamic processes and features of earth's interior and surface	K2
		CO9: Relate population and environment and the role of IT in environment and human health	K3
		CO10: Summarize the impact of environmental integrated themes and social issues	K2

CO-PO MAPPING

COs		Pos											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K2	2	1	-	-	-	3	-	3	-	-	-	-
CO2	K2	2	1	-	-	-	2	-	-	-	-	-	-
CO3	K3	3	2	1	1	3	2	-	-	3	-	-	-
CO4	K3	3	2	1	1	3	3	-	-	-	-	-	-
CO5	K3	3	2	1	1	3	3	2	-	3	-	-	-
CO6	K2	2	1	-	-	-	-	-	3	-	-	-	-
CO7	K2	2	1	-	-	-	-	3	-	-	-	-	2
CO8	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO9	K3	3	2	1	1	3	-	-	-	-	-	-	-
CO10	K2	2	1	-	-	-	3	-	3	-	-	-	2

B.E -DEPARTMENT OF ECE - R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	K4
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	K6
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations	K2
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	K2
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	K6
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	K2
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K3
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	K5
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K2

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES

COURSE CODE/ NAME: EC8651 Transmission Line And RF System

COs	Students Will Able To	Knowledge Level
CO 1	Discuss the fundamental concepts of wave propagation in Transmission Lines and losses	K3
CO 2	Analyze signal propagation at radio frequencies	K4
CO 3	Apply smith chart for line parameter and impedance calculations	K4
CO 4	Analyze the characteristics of TE and TM waves in wave guide	K3
CO 5	Design a RF transceiver system for wireless communication	K4
CO 6	Analyze of various gain in RF system	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/C O	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO5	P O6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K3	3	2	2	-	-	-	-	-	-	-	-	-
CO2	K4	2	1	2	1	-	-	-	-	-	-	-	-
CO3	K4	3	3	2	2	-	-	-	-	-	-	-	-
CO4	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO5	K4	3	2	2	2	1	-	-	-	-	-	-	-
CO6	K3	3	2	1	1	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME: EC8691 Microprocessor and Microcontroller

COs	Students Will Able To	Knowledge Level
CO 1	Discuss the basic architecture of 8086 and develop assembly language programming.	<u>K2</u>
CO 2	Examine the 8086 signals, bus structure and I/O programming.	K2
CO 3	Analyse various I/O interfacing mechanisms with 8086 microprocessor.	K4
CO 4	Examine various programming and application case studies based on 8086 microprocessor.	K2
CO 5	Develop 8051 microcontroller based ALP for specified problem.	K4
CO 6	Examine various interfacing mechanisms with 8051 microcontroller	K2

CO-PO MAPPING

COs		POs											
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
		K3	K4	K5	K5	K3/K5/ K 6	K4	K2	K3	K3	K2	K3	K3
CO1	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO2	K4	3	3	2	2	-	-	-	-	-	-	-	-
CO3	K5	1	2	3	3	-	-	-	-	-	-	-	-
CO4	K3	3	2	1	1	-	-	-	-	-	-	-	-
CO5	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO6	K2	2	1	-	-	-	-	-	-	-	-	-	-

1- LOW

2- MEDIUM

3- HIGH

B.E ECE IV YEAR (R-13)

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	K3
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	K4
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	K4
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	K6
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations	K2
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	K2
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	K6
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	K2
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	K3
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	K3
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	K5
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	K2

Course Code	Course Name	Course Outcome(CO) Students will be able to	Knowledge Level
EC6801	Wireless Communication	CO1:Characterize a wireless channel and evolve the system design specifications.	K3
		CO2:Discuss a cellular system based on resource availability and traffic demands	K2
		CO3:Discuss about digital signaling used in cellular system	K2
		CO4:Identify suitable signaling and multipath mitigation techniques for the wireless channel and system under consideration.	K3
		CO5:Illustrate a process and its functions of transmit/receive diversity and MIMO systems.	K2
		CO6:Understand emerging technologies required for fourth generation mobile system such as MIMO.	K1

CO-PO MAPPING

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO2	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO3	K2	3	2	1	1	-	-	-	-	-	-	-	-
CO4	K3	2	1	-	-	-	-	-	-	-	-	-	-
CO5	K2	1	1	-	-	-	-	-	-	-	-	-	-
CO6	K1	2	1	-	-	-	-	-	-	-	-	-	-

COURSE CODE	COURSE NAME	COURSE OUTCOMES-On successful	Level
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		completion of course, all students will be able to	
GE 6757	TOTAL QUALITY MANAGEMENT	CO1 :Outline the dimensions and barriers with quality	K1
		CO2:Illustrate the TQM Principle.	K2
		CO3:Demonstrate Tools utilization for Quality improvement.	K4
		CO4:Explain the various types of Techniques are used to measure Quality	K2
		CO5:Apply various Quality Systems and Auditing on implementation of TQM.	K3
		CO6:Develop the leadership quality to become a smart leader in academic /industry.	K2
		CO7:Apply the 5S principle for the development of total quality management system.	K3
COURSE CODE	COURSE NAME	COURSE OUTCOMES-On successful completion of course, all students will be able to	Level
GE 6075	PROFESSIONAL ETHICS AND ENGINEERING	CO1 : Understand the core values that shape the ethical behavior of an engineer and Exposed awareness on professional ethics and human values.	K1
		CO2: Understand the basic perception of profession, professional ethics, various moral issues & uses of ethical theories	K2
		CO3: Understand various social issues, industrial standards, code of ethics and role of professional ethics in engineering field	K4
		CO4: Aware of responsibilities of an engineer for safety and risk benefit analysis,professionalrights and responsibilities of an engineer.	K2
		CO5: Acquire knowledge about various roles of engineers in variety of global issues and able to apply ethical principles to resolve situations that arise in their professional lives	K3
		CO6: Understand the professional skills and moral in engineering.	K2

Table 1: Mapping of COs

COs		POs											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K2	1	0	1	0	1	0	0	0	0	1	0	0
CO2	K4	1	0	0	0	0	0	0	0	0	0	0	0
CO3	K5	0	2	0	0	0	0	0	0	0	0	0	0
CO4	K3	0	2	0	1	1	0	0	0	0	0	0	0
CO5	K2	1	0	0	3	0	0	0	1	0	0	0	0
CO6	K2	1	0	0	0	1	0	0	0	0	0	0	0
CO7	K2	1	2	0	0	0	1	0	0	0	0	0	0
CO8	K3	1	0	1	0	1	0	0	0	0	1	0	0

B.E ELECTRICAL AND ELECTRONICS ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Apply the Mathematical knowledge and the basics of Science and Engineering to solve the problems pertaining to Electronics and Instrumentation Engineering	K3
PO2	Identify and formulate Electrical and Electronics Engineering problems from research literature and be able to analyze the problem using first principles of Mathematics and Engineering Sciences.	K4
PO3	Come out with solutions for the complex problems and to design system components or process that fulfill the particular needs taking into account public health and safety and the social, cultural and environmental issues	K5
PO4	Draw well-founded conclusions applying the knowledge acquired from research and research methods including design of experiments, analysis and interpretation of data and synthesis of information and to arrive at significant conclusion	K5
PO5	Form, select and apply relevant techniques, resources and Engineering and IT tools for Engineering activities like electronic prototyping, modeling and control of systems and also being conscious of the limitations.	K6
PO6	Understand the role and responsibility of the Professional Electrical and Electronics Engineer and to assess societal, health, safety issues based on the reasoning received from the contextual knowledge.	K3
PO7	Be aware of the impact of professional Engineering solutions in societal and environmental contexts and exhibit the knowledge and the need for Sustainable Development	K3
PO8	Apply the principles of Professional Ethics to adhere to the norms of the engineering practice and to discharge ethical responsibilities	K3
PO9	Function actively and efficiently as an individual or a member/leader of different teams and multidisciplinary projects.	K3
PO10	Communicate efficiently the engineering facts with a wide range of engineering community and others, to understand and prepare reports and design documents; to make effective presentations and to frame and follow instructions	K3
PO11	Demonstrate the acquisition of the body of engineering knowledge and insight and Management Principles and to apply them as member / leader in teams and multidisciplinary environments	K3
PO12	Recognize the need for self and life-long learning, keeping pace with technological challenges in the broadest sense.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME : IC8451 CONTROL SYSTEMS		
COs	Students Will Able To	Knowledge Level
CO 1	Identify the various control system components and their representation	K2
CO 2	Analyze the various time domain parameters	K4
CO 3	Analyze the various frequency response plots and its systems	K4
CO 4	Discuss the concept of various system stability criterion	K2
CO 5	Design state variable representation of physical system	K5

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K5	K5	K6	K3	K3	K3	K3	K3	K3	K3
CO 1	K2	1	2	3	2	3							3
CO 2	K4	2	2	1	2	1							1
CO 3	K4	2	2	3	2	1							1
CO 4	K2	2	2	2	3	1							2
CO 5	K5	3	3	3	2	2							2
Avg CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES

COURSE CODE/ NAME : EE8401/ELECTRICAL MACHINES-II

COs	Students Will Able To	Knowledge Level
CO 1	Demonstrate the construction and working principle of Synchronous Generator	K2
CO 2	Apply MMF curves and armature windings.	K3
CO 3	Acquire knowledge on Synchronous motor.	K2
CO 4	Discuss the construction and working principle of Three phase Induction Motor	K2
CO 5	Compare the construction and working principle of Special Machines	K2
CO 6	Predetermine the performance characteristics of Synchronous Machines.	K5

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
		K3	K4	K5	K5	K6	K3	K3	K3	K3	K3	K3	K3
CO 1	K2		1	2	2								2
CO 2	K3	2	1		3	1							
CO 3	K2		2	1				1					
CO 4	K2		2	2	1			1					2
CO 5	K2		1		2	1		1					1
CO 6	K5	3	2	2	1	1							
Avg CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES

COURSE CODE/ NAME : EE 8403/MEASUREMENTS AND INSTRUMENTATION

COs	Students Will Able To	Knowledge Level
CO 1	Acquire knowledge on Basic functional elements of instrumentation	K2
CO 2	Identify the concepts of Fundamentals of electrical and electronic instruments	K2
CO 3	Analyze the various measurement techniques	K4
CO 4	Acquire the knowledge on Various storage and display devices	K2
CO 5	Demonstrate the concepts Various transducers and the data acquisition systems	K2
CO 6	Analyze the electrical and electronic Instruments and operational features of display Devices and Data Acquisition System.	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2	3	1										
CO 2	K2	1	2	1									
CO 3	K4				3								
CO 4	K2			1	2								
CO 5	K2				2	2							
CO 6	K4					2							2
Total													
Avg CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES		
COURSE CODE/ NAME : EE8402/TRANSMISSION AND DISTRIBUTION		
COs	Students Will Able To	Knowledge Level
CO 1	Demonstrate the importance and functioning of transmission line parameters	K2
CO 2	Discuss the concepts of lines and insulators	K2
CO 3	Acquire the knowledge on the performance of transmission line	K2
CO 4	Analyse the importance of distribution on the electric power in power system	K4
CO 5	Revise the knowledge on underground cabilitys	K2
CO 6	Analyse the different components used in transmission and distribution levels of power system	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K5	K5	K6	K3	K3	K3	K3	K3	K3	K3
CO1	K2	2	3	1	2								
CO2	K2		3		1			1					
CO3	K2			2	2	1							
CO4	K4	3	2	1	1	2		1					
CO5	K2	1	1	2	3			1					
CO6	K4		2	3	1			2					2
Avg CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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B.E ELECTRICAL AND ELECTRONICS ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Apply the Mathematical knowledge and the basics of Science and Engineering to solve the problems pertaining to Electronics and Instrumentation Engineering	K3
PO2	Identify and formulate Electrical and Electronics Engineering problems from research literature and be able to analyze the problem using first principles of Mathematics and Engineering Sciences.	K4
PO3	Come out with solutions for the complex problems and to design system components or process that fulfill the particular needs taking into account public health and safety and the social, cultural and environmental issues	K5
PO4	Draw well-founded conclusions applying the knowledge acquired from research and research methods including design of experiments, analysis and interpretation of data and synthesis of information and to arrive at significant conclusion	K5
PO5	Form, select and apply relevant techniques, resources and Engineering and IT tools for Engineering activities like electronic prototyping, modeling and control of systems and also being conscious of the limitations.	K6
PO6	Understand the role and responsibility of the Professional Electrical and Electronics Engineer and to assess societal, health, safety issues based on the reasoning received from the contextual knowledge.	K3
PO7	Be aware of the impact of professional Engineering solutions in societal and environmental contexts and exhibit the knowledge and the need for Sustainable Development	K3
PO8	Apply the principles of Professional Ethics to adhere to the norms of the engineering practice and to discharge ethical responsibilities	K3
PO9	Function actively and efficiently as an individual or a member/leader of different teams and multidisciplinary projects.	K3
PO10	Communicate efficiently the engineering facts with a wide range of engineering community and others, to understand and prepare reports and design documents; to make effective presentations and to frame and follow instructions	K3
PO11	Demonstrate the acquisition of the body of engineering knowledge and insight and Management Principles and to apply them as member / leader in teams and multidisciplinary environments	K3
PO12	Recognize the need for self and life-long learning, keeping pace with technological challenges in the broadest sense.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME : EE8003/ POWER SYSTEM STABILITY		
COs	Students Will Able To	Knowledge Level
CO 1	Analyse the stability of power system	K4
CO 2	Acquire the knowledge on small signal stability	K2
CO 3	Discuss about the transient stability	K2
CO 4	Analyse the voltage stability	K4
CO 5	Discuss the dynamic behaviour of synchronous generator for different disturbances	K2
CO 6	Analyse the various methods to enhance the stability of a power system	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K5	K5	K6	K3	K3	K3	K3	K3	K3	K3
CO1	K4				3	1							
CO2	K2				2	3							
CO3	K2				3	1							
CO4	K4				3	1							
CO5	K2				3								
CO6	K4				1	3							
Avg CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES

COURSE CODE/ NAME : EE 8005 / SPECIAL ELECTRICAL MACHINES

COs	Students Will Able To	Knowledge Level
CO 1	Analyze the controllers for special Electrical Machines	K4
CO 2	Acquire the knowledge on construction and operation of stepper motor	K2
CO 3	Acquire the knowledge on construction and operation of stepper switched reluctance motors.	K2
CO 4	Discuss the construction, principle of operation, switched reluctance motors.	K2
CO 5	Acquire the knowledge on construction and operation of permanent magnet brushless D.C. motors.	K2
CO 6	Acquire the knowledge on construction and operation of permanent magnet synchronous motors.	K2
CO 7	select a special Machine for a particular application	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		P O 1	P O 2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K 3	K 4	K5	K5	K6	K3	K3	K3	K3	K3	K3	K3
CO1	K4	2		3	2								
CO2	K2	1		3	1								
CO3	K2			3	1								
CO4	K2			3	1								
CO5	K2			3	1	2							
CO6	K2			3	1	2							
CO7	K4			3	3								
									1				
Avg CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME : EE8601/SOLID STATE DRIVES

COs	Students Will Able To	Knowledge Level
CO 1	Recognize the need for converter and identify the converter for solid state drive.	K2
CO 2	Select suitability drive for the given application.	K2
CO 3	Discuss the steady state operation and transient dynamics of a motor load system.	K2
CO 4	Analyze the operation of the converter/chopper fed dc drive.	K4
CO 5	Analyze the operation and performance of AC motor drives.	K4
CO 6	Design the current and speed controllers for a closed loop solid state DC motor drive.	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K5	K5	K6	K3	K3	K3	K3	K3	K3	K3
CO 1	K2		2	1	1								
CO 2	K2		2		1	2							
CO 3	K2		1	2	1								
CO 4	K4	3	1	1	1	1		1					
CO 5	K4	2	1	1		1							
CO 6	K4	1	2	3	1	1							
Avg CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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B.E ELECTRICAL AND ELECTRONICS ENGINEERING-- R2013

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	Ability to understand and apply differential equations, integrals, matrix theory, probability theory and Laplace, Fourier and Z transformations for engineering problems	K3
PO2	Ability to understand and apply basic science, circuit theory, Electro-magnetic field theory control theory and apply them to electrical engineering problems..	K3
PO3	Ability to model and analyze electrical apparatus and their application to power system	K5
PO4	Ability to understand and analyze power system operation, stability, control and protection	K5
PO5	Ability to handle the engineering aspects of electrical energy generation and utilization.	K2
PO6	Ability to understand and analyse, linear and digital electronic circuits.	K2
PO7	Ability to review, prepare and present technological developments	K5
PO8	Ability to form a group and develop or solve engineering hardware and problems	K6
PO9	To understand and apply computing platform and software for engineering problems.	K2
PO10	To understand ethical issues, environmental impact and acquire management skills.	K2

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES

COURSE CODE/NAME :EE6801/Electric Energy Generation, Utilization and Conservation

COs	Students Will Able To	Knowledge Level
CO 1	Analyse the various concepts behind renewable energy resources.	K4
CO 2	Introduce the energy saving concept by different ways of illumination.	K2
CO 3	Discuss about the different methods of electric heating and electric welding.	K2
CO 4	Analyse the Solar Radiation and Solar Energy Collectors	K4
CO 5	Analyse the concepts of Wind Energy and its utilization	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
	K LEVEL	K3	K3	K5	K5	K2	K2	K5	K6	K2	K2
CO1	K4	1	2		1						
CO2	K2	2	1								
CO3	K2		2								
CO4	K4			2						2	
CO5	K2		1			2					
Avg CO/PO											
Course Avg. CO/PO											

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES		
COURSE CODE/ NAME :EE6009/ Power Electronics for Renewable Energy Systems		
COs	Students Will Able To	Knowledge Level
CO 1	Analysethe stand alone and grid connected renewable energy systems.	K4
CO 2	Acquire the knowledge to derive the criteria for the design of power converters for renewable energy applications	K4
CO 3	Analyse and comprehend the various operating modes of wind electrical generators and solar energy systems.	K4
CO 4	Design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems.	K3
CO 5	develop maximum power point tracking algorithms	K6

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
	K LEVEL	K3	K3	K5	K5	K2	K2	K5	K6	K2	K2
CO1	K4	1	2		1						
CO2	K4		1			1				2	
CO3	K4	1	2								
CO4	K3	1	2							2	
CO5	K6		1			1			2		
Avg CO/PO											
Course Avg. CO/PO											

1- LOW	2- MEDIUM	3- HIGH
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GOJAN SCHOOL OF BUSINESS AND TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

REGULATIONS – 2017

B.TECH IT – COURSE OUTCOMES (CO)

II-YEAR

Course Code	Code Name		Course Outcome(CO) Students will be able to	Knowledge Level
CS8451	DESIGN ANALYSIS OF ALGORITHM	CO 1	Design algorithms for various computing problems.	K3
		CO 2	Analyze the time and space complexity of algorithms	K4
		CO 3	Analyze the time and space complexity of algorithms	K3
		CO 4	Analyze the time and space complexity of algorithms	K5

CO PO MAPPING :

PROGRAM OUTCOMES

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K3	3	2	1			--	--	--	--	--	--	--
CO2	K4	2	3	1			--	--	--	--	--	--	--
CO3	K3	3	2	1			--	--	--	--	--	--	--
CO4	K5	1	2	3			--	--	--	--	--	--	--

GOJAN SCHOOL OF BUSINESS AND TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

REGULATIONS – 2017

B.TECH IT – COURSE OUTCOMES (CO)

III-YEAR

Course Code	Code Name		Course Outcome(CO) Students will be able to	Knowledge Level
IT8076	SOFTWARE TESTING	CO 1	Design test cases suitable for a software development for different domains.	K5
		CO 2	Identify suitable tests to be carried out.	K2
		CO 3	Prepare test planning based on the document.	K5
		CO 4	Document test plans and test cases designed.	K2
		CO 5	Use automatic testing tools.	K3
		CO 6	Develop and validate a test plan.	K5

CO PO MAPPING:

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K5	3	3	3	3	3	--	--	--	--	--	--	--
CO2	K2	2	1	1	1	1	--	--	--	--	--	--	--
CO3	K5	3	3	3	3	3	--	--	--	--	--	--	--
CO4	K2	2	1	1	1	1	--	--	--	--	--	--	--
CO5	K3	3	2	1	1	1	--	--	--	--	--	--	--
CO6	K5	3	3	3	3	3	--	--	--	--	--	--	--

GOJAN SCHOOL OF BUSINESS AND TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

REGULATIONS – 2013

B.TECH IT – COURSE OUTCOMES (CO)

IV-YEAR

Course Code	Code Name		Course Outcome(CO) Students will be able to	Knowledge Level
GE6075	PROFESSIONAL ETHICS IN ENGINEERING	CO 1	Apply ethics in society	K3
		CO 2	Discuss the ethical issues related to engineering	K2
		CO 3	Develop Engineers as responsible Experimenters	K4
		CO 4	Realize the responsibilities and rights in the society	K2
		CO 5	Discuss the Global issues in environment and Multinational Corporations	K2

CO PO MAPPING :

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K5	K5	K3/K5/K6	K4	K2	K3	K3	K2	K3	K3
CO1	K3	3	2	1	1	--	--	--	3	3	--	--	--
CO2	K2	2	1	1	1	--	--	--	2	2	--	--	--
CO3	K4	3	3	2	2	--	--	--	3	3	--	--	--
CO4	K2	2	1	1	1	--	--	--	2	2	--	--	--
CO5	K2	2	1	1	1	--	--	--	2	2	--	--	--

B.E MECHANICAL ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	An ability to apply knowledge of mathematics and engineering sciences to develop mathematical models for industrial problems	K3
PO2	An ability to identify, formulate, and solve complex engineering problems with high degree of competence.	K4
PO3	An ability to design and conduct experiments, as well as to analyze and interpret data obtained through those experiments.	K4
PO4	An ability to design mechanical systems, component, or a process to meet desired needs within the realistic constraints such as environmental, social, political and economic sustainability	K4
PO5	An ability to use modern tools, software and equipment to analyze multidisciplinary problems	K5
PO6	An ability to demonstrate on professional and ethical responsibilities..	K3
PO7	An ability to communicate, write reports and express research findings in a scientific community	K3
PO8	An ability to adapt quickly to the global changes and contemporary practices.	K3
PO9	An ability to engage in life-long learning.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES

COURSE CODE/ NAME : ME8492/KINEMATICS OF MACHINERY

COs	Students Will Able To	Knowledge Level
CO 1	Understand the basics of mechanism	K2
CO 2	Calculate velocity and acceleration in simple mechanisms	K3
CO 3	Design and Develop CAM profiles	K3
CO 4	Solve problems on gears and gear trains	K3
CO 5	Examine friction in machine elements	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K4	K4	K5	K3	K3	K3	K3	-	-	-
CO 1	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO 2	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO 3	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO 4	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO 5	K3	3	2	1	-	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES		
COURSE CODE/ NAME : ME8451 /MANUFACTURING TECHNOLOGY-II		
COs	Students Will Able To	Knowledge Level
CO 1	Explain the mechanism of material removal processes	K2
CO 2	Describe the constructional and operational features of centre lathe and other special purpose lathes.	K2
CO 3	Describe the constructional and operational features of shaper, planner, milling, and drilling, sawing and broaching machines.	K2
CO 4	Explain the types of grinding and other super finishing processes apart from gear manufacturing processes	K2
CO 5	Summarize numerical control of machine tools and write a part program	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVE L	K3	K4	K4	K4	K5	K3	K3	K3	K3	-	-	-
CO 1	K2	2	-	-	-	-	-	-	-	-	-	-	-
CO 2	K2	2	-	-	-	-	-	-	-	-	-	-	-
CO 3	K2	2	-	-	-	-	-	-	-	-	-	-	-
CO 4	K2	2	-	-	-	-	-	-	-	-	-	-	-
CO 5	K2	2	-	-	-	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES

COURSE CODE/ NAME : ME8491/ENGINEERING METALLURGY

COs	Students Will Able To	Knowledge Level
CO 1	Explain alloys and phase diagram, Iron-Iron carbon diagram and steel classification.	K2
CO 2	Explain isothermal transformation, continuous cooling diagrams and different heat treatment processes.	K2
CO 3	Clarify the effect of alloying elements on ferrous and non-ferrous metals.	K2
CO 4	Summarize the properties and applications of nonmetallic materials.	K2
CO 5	Explain the testing of mechanical properties.	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2	2	-	-	-	-	-	-	-	-	-	-	-
CO 2	K2	2	-	-	-	-	-	-	-	-	-	-	-
CO 3	K2	2	-	-	-	-	-	-	-	-	-	-	1
CO 4	K2	2	-	-	-	-	-	-	-	-	-	-	1
CO 5	K2	2	1	-	-	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME : CE8395/STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS

COs	Students Will Able To	Knowledge Level
CO 1	Understand the concepts of stress and strain in simple and compound bars, the importance of principal stresses and principal planes	K2
CO 2	Understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment.	K2
CO 3	Apply basic equation of simple torsion in designing of shafts and helical spring	K3
CO 4	Calculate the slope and deflection in beams using different methods.	K3
CO 5	Analyze and design thin and thick shells for the applied internal and external pressures.	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO 2	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO 3	K3	3	2	1	-	-	-	-	-	-	-	-	1
CO 4	K3	3	2	1	-	-	-	-	-	-	-	-	1
CO 5	K4	3	2	1	-	-	-	-	-	-	-	-	1
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME : ME8493 /THERMAL ENGINEERING-I

COs	Students Will Able To	Knowledge Level
CO 1	Apply thermodynamic concepts to different air standard cycles and solve problems.	K3
CO 2	Solve problems in single stage and multistage air compressors	K3
CO 3	Explain the functioning and features of IC engines, components and auxiliaries.	K2
CO 4	Calculate performance parameters of IC Engines.	K3
CO 5	Explain the flow in Gas turbines and solve problems	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO 2	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO 3	K2	2	-	-	-	-	-	-	-	-	-	-	-
CO 4	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO 5	K3	3	2	1	-	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

B.E MECHANICAL ENGINEERING-- R2017

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	An ability to apply knowledge of mathematics and engineering sciences to develop mathematical models for industrial problems	K3
PO2	An ability to identify, formulate, and solve complex engineering problems with high degree of competence.	K4
PO3	An ability to design and conduct experiments, as well as to analyze and interpret data obtained through those experiments.	K4
PO4	An ability to design mechanical systems, component, or a process to meet desired needs within the realistic constraints such as environmental, social, political and economic sustainability	K4
PO5	An ability to use modern tools, software and equipment to analyze multidisciplinary problems	K5
PO6	An ability to demonstrate on professional and ethical responsibilities..	K3
PO7	An ability to communicate, write reports and express research findings in a scientific community	K3
PO8	An ability to adapt quickly to the global changes and contemporary practices.	K3
PO9	An ability to engage in life-long learning.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES		
COURSE CODE/ NAME : ME8651 /DESIGN OF TRANSMISSION SYSTEM		
COs	Students Will Able To	Knowledge Level
CO 1	Apply the design techniques of belts, chains and rope drives.	K3
CO 2	Apply the design techniques of spur gears and parallel axis helical gears.	K3
CO 3	Apply the design techniques of bevel, worm and cross helical gears	K3
CO 4	Apply the design techniques of gear boxes	K3
CO 5	Apply the design techniques of cams, brakes and clutches	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K4	K4	K5	K3	K3	K3	K3	-	-	-
CO1	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO2	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO3	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO4	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO5	K3	3	2	1	-	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES		
COURSE CODE/ NAME :ME8691/COMPUTER AIDED DESIGN AND MANUFACTURING		
COs	Students Will Able To	Knowledge Level
CO 1	Explain the 2D and 3D transformations, clipping algorithm, Manufacturing models and Metrics	K2
CO 2	Outline the fundamentals of parametric curves, surfaces and Solids	K2
CO 3	Summarize the different types of Standard systems used in CAD	K2
CO 4	Develop NC & CNC programming concepts in part programme for Lathe & Milling Machines	K3
CO 5	Demonstrate the different types of techniques used in Cellular Manufacturing and FMS	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K4	K4	K5	K3	K3	K3	K3	-	-	-
CO1	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO2	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO3	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO4	K3	3	2	-	-	1	-	-	-	-	-	-	-
CO5	K2	2	1	-	-	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES		
COURSE CODE/ NAME :ME 8693/HEAT AND MASS TRANSFER		
COs	Students Will Able To	Knowledge Level
CO 1	Apply heat conduction equations to different surface configurations under steady state and transient conditions and solve problems.	K3
CO 2	Apply free and forced convective heat transfer correlations to internal and external flows through/over various surface configurations and solve problems	K3
CO 3	Apply LMTD and NTU methods of thermal analysis to different types of heat exchanger configurations and solve problems	K3
CO 4	Apply basic laws for Radiation principles to radiative heat transfer between different types of surfaces to solve problems	K3
CO 5	Apply diffusive and convective mass transfer equations and correlations to solve problems for different applications	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K4	K4	K5	K3	K3	K3	K3	-	-	-
CO1	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO2	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO3	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO4	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO5	K3	3	2	1	-	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES		
COURSE CODE/ NAME :ME8692/FINITE ELEMENT ANALYSIS		
COs	Students Will Able To	Knowledge Level
CO 1	Examine different mathematical Techniques used in FEM analysis.	K4
CO 2	Analysis the various concepts Modeling techniques.in Finite Element analysis.	K4
CO 3	Analysis the concepts of Nodes and elements.	K4
CO 4	Analysis in Structural and thermal problem.	K4
CO 5	Analysis the various problems on 1D,2D, isoparametric element and dynamic problems using finite element modeling techniques.	K4

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K4	K4	K5	K3	K3	K3	K3	-	-	-
CO1	K4	3	3	2	1	-	-	-	-	-	-	-	-
CO2	K4	3	3	2	1	-	-	-	-	-	-	-	-
CO3	K4	3	3	2	1	-	-	-	-	-	-	-	-
CO4	K4	3	3	2	1	-	-	-	-	-	-	-	-
CO5	K4	3	3	2	1	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES		
COURSE CODE/ NAME :ME 8694/HYDRAULICS AND PNEUMATICS		
COs	Students Will Able To	Knowledge Level
CO 1	Apply different theories related to Fluid power and operation of different types of pumps.	K3
CO 2	Summarize the features and functions of Hydraulic motors, actuators and Flow control valves	K2
CO 3	Experiment with different types of Hydraulic circuits and systems	K3
CO 4	Build the working of different pneumatic circuits and systems	K3
CO 5	Utilize the various trouble shooting methods and applications of hydraulic and pneumatic systems.	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K4	K4	K5	K3	K3	K3	K3	-	-	-
CO1	K3	3	2	1	-	-	-	-	-	-	-	-	-
CO2	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO3	K3	3	1	-	-	-	-	-	-	-	-	-	-
CO4	K3	3	2	-	-	-	-	-	-	-	-	-	-
CO5	K3	3	2	1	-	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES		
COURSE CODE/ NAME :ME 8091/AUTOMOBILE ENGINEERING		
COs	Students Will Able To	Knowledge Level
CO 1	Recognize the various parts of the automobile and their functions and materials.	K2
CO 2	Discuss the engine auxiliary systems and engine emission control.	K2
CO 3	Distinguish the working of different types of transmission systems.	K
CO 4	Explain the steering, brakes and suspension systems.	K2
CO 5	Predict possible alternate sources of energy for IC engines.apply different theories related to fluid power and operation of different types of pumps.	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	K LEVEL	K3	K4	K4	K4	K5	K3	K3	K3	K3	-	-	-
CO1	K2	3	2	1	-	-	-	-	-	-	-	-	-
CO2	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO3	K	3	1	-	-	-	-	-	-	-	-	-	-
CO4	K2	3	2	-	-	-	-	-	-	-	-	-	-
CO5	K2	3	2	1	-	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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B.E MECHANICAL ENGINEERING-- R2013

PROGRAM OUTCOMES		KNOWLEDGE LEVEL
PO1	An ability to apply knowledge of mathematics and engineering sciences to develop mathematical models for industrial problems	K3
PO2	An ability to identify, formulate, and solve complex engineering problems with high degree of competence.	K4
PO3	An ability to design and conduct experiments, as well as to analyze and interpret data obtained through those experiments.	K4
PO4	An ability to design mechanical systems, component, or a process to meet desired needs within the realistic constraints such as environmental, social, political and economic sustainability	K4
PO5	An ability to use modern tools, software and equipment to analyze multidisciplinary problems	K5
PO6	An ability to demonstrate on professional and ethical responsibilities..	K3
PO7	An ability to communicate, write reports and express research findings in a scientific community	K3
PO8	An ability to adapt quickly to the global changes and contemporary practices.	K3
PO9	An ability to engage in life-long learning.	K3

Bloom's Taxonomy Knowledge Levels

K1- Remembering	K2- Understanding	K3- Applying	K4- Analyzing	K5- Evaluating	K6- Creating
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COURSE OUTCOMES

COURSE CODE/ NAME :MG6863/ENGINEERING ECONOMICS

COs	Students Will Able To	Knowledge Level
CO 1	Understand the fundamental of economics in engineering aspects.	K2
CO 2	Apply the concept of value engineering.	K3
CO 3	Implement the cash flow analysis in an organization	K3
CO 4	Apply basic knowledge for replacement and maintenance of asset	K3
CO 5	Apply the depreciation concept in asset and take a sound decisions economically	K3

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2	3	-	-	-	-	-	-	-	-	-	-	-
CO 2	K3	3	2	-	-	-	-	-	-	-	-	-	-
CO 3	K3	3	2	-	-	-	-	-	-	-	-	-	-
CO 4	K3	3	2	-	-	-	-	1	-	-	-	-	-
CO 5	K3	3	2	-	-	-	-	1	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH

COURSE OUTCOMES

COURSE CODE/ NAME :IE6605/PRODUCTION PLANNING AND CONTROL

COs	Students Will Able To	Knowledge Level
CO 1	Understand and remember production planning and control activities	K2
CO 2	Apply and evaluate work study methods and tools	K3
CO 3	Understand the procedure of product planning and process planning	K2
CO 4	Apply the concept of production scheduling	K3
CO 5	Explain about Inventory Control and manufacturing requirements by Manufacturing Requirement Planning (MRP II) and Enterprise Resource Planning (ERP).	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
	K LEVEL	K3	K4	K4	K4	K5	K3	K3	K3	K3	-	-	-
CO 1	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO 2	K3	3	1	-	-	-	-	-	-	-	-	-	-
CO 3	K2	2	1	-	-	-	-	-	-	-	-	-	-
CO 4	K3	3	2	-	-	-	-	-	-	-	-	-	-
CO 5	K2	2	1	-	-	-	-	-	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW	2- MEDIUM	3- HIGH
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COURSE OUTCOMES

COURSE CODE/ NAME :ME6016 /ADVANCED I.C ENGINES

COs	Students Will Able To	Knowledge Level
CO 1	Understand the components and principles of S.I engines	K2
CO 2	Understand the components and principles of C.I Engines	K2
CO 3	Summarize the pollutant formation and control of I.C engines	K2
CO 4	Understand the Importance and Techniques for using Alternate fuels in I.C engines	K2
CO 5	Review the Engine Performance with Different Alternate Fuels	K2

CO PO MAPPING WITH BLOOM TAXONOMY KNOWLEDGE LEVEL:

COs	PO/CO K LEVE L	PROGRAM OUTCOMES											
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO 1	K2	2	-	-	-	-	-	1	-	-	-	-	-
CO 2	K2	2	-	-	-	-	-	1	-	-	-	-	-
CO 3	K2	2	-	-	-	-	-	1	-	-	-	-	-
CO 4	K2	2	-	-	-	-	-	1	-	-	-	-	-
CO 5	K2	2	-	-	-	-	-	1	-	-	-	-	-
Avg. CO/PO													
Course Avg. CO/PO													

1- LOW

2- MEDIUM

3- HIGH