S J B Institute of Technology

SJBIT
BGS Health & Education City, Dr. Vishnuvardhan Road, Kengeri, Bengaluru-560060

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Department of Mathematics

Course Outcomes and CO-PO-PSO Articulation Matrix

Semester-I/II

Subject: Engg. Mathematics - I		**Subject Code:** 17MAT11
Course Outcomes		
CO1	Know the technique of successive differentiation and finding the nth derivative of standard function, Understand the various concepts and interpretations of polar curves.	
CO2	Effective way of representing complicated functions using Taylors and Maclaurins series, Calculate the limit of a function at a point numerically and algebraically using L'Hospitals rule	
CO3	To use Partial derivatives to calculate rates of change of multivariate functions, To use Partial derivatives to calculate rates of change of multivariate functions, Analyze position, velocity and acceleration in two or three dimension using the calculus of valued function	
CO4	Know the derivations of standard reduction formulae in Integral Calculus, Recognise and solve first order ordinary differential equations, Newton's law of cooling.	
CO5	To use matrices techniques for solving system of linear equations in the different areas of linear algebra.	

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	2	3													
CO2	3	3													
CO3	2	3													
CO4	2	3													
CO5	3	2													
Average	**2.4**	**2.8**													

Subject: Engg. Mathematics - II		**Subject Code:** 17MAT21
Course Outcomes		
CO1	Solve differential equations of electrical circuits, forced oscillations of mass spring and elementary heat transfer.	
CO2	Solve partial differential equations fluid mechanics, electromagnetic theory and heat transfer.	
CO3	Evaluate double and triple integrals to find area, volume, mass and moment of interia of plane and solid region.	
CO4	Evaluation of beta and gamma function and its application.	
CO5	Use Laplace transform to determine general or complete solutions to linear ODE..	

CO-PO-PSO Mapping															
COs	POs												PSOs		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	2													
CO2	3	3													
CO3	3	2													
CO4	3	3													
CO5	3	2													
Average	3	2.6													

HOD

Dr. Padmaja Venugopal, Ph.D.
Professor and Head
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Sri Adichunchanagiri Shikshana Trust ®

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BGS Health and Education City, Kengeri, Bangalore-560 060

Course Outcomes and CO-PO-PSO Articulation Matrix

Semester-I/II

Subject: Engineering Physics		**Subject Code:**17PHY12/22
Course Outcomes		
CO1	Gain Knowledge about Modern physics and quantum mechanics and will update the basic concepts to implement the skills in problem solving and technology.	
CO2	Study of material properties and their applications is the prime role to understand and use in engineering applications and studies to solve the problems.	
CO3	Study Lasers and Optical fibers and its applications to import knowledge and to develop skills and to use modern instruments in the engineering applications and to solve the problems	
CO4	Understand Crystal structure and applications to boost the technical skills, its applications and to solve the problems.	
CO5	Expose shock waves concept and its applications to bring latest technology to the students at the at initial stages to develop research orientation programs and understand basic concepts of Nano science and technology to solve the engineering problems.	

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	2	2													
CO2	2	2													
CO3	2	2													
CO4	2	1													
CO5	2	1													
Average	**2**	**1.6**													

Head of the Department
Department of Physics
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Subject: Engineering Physics Lab	**Subject Code:** 17PHYL17/27

Course Outcomes	
CO1	Develop skills to impart practical knowledge in real time solution.
CO2	Understand principle, concept, working and application of new technology and comparison of results with theoretical calculations and Design new instruments with practical knowledge.
CO3	Gain knowledge of new concept in the solution of practical oriented problems and to understand more deep knowledge about the solution to theoretical problems.
CO4	Understand measurement technology, usage of new instruments and real time applications in engineering studies.

CO-PO-PSO Mapping

Cos	**Pos**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	3			3											
CO2	3			3											
CO3	3			3											
CO4	3			3											
Average	**3**			**3**											

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Course Outcomes and CO-PO-PSO Articulation Matrix

Semester-I/II

Subject: Engineering Chemistry	**Subject Code:**17CHE12/22

Course Outcomes

CO1	Understand the use of free energy in equilibria using thermodynamic consideration, electrochemical energy systems
CO2	Understand and explain the Causes & effects of corrosion of metals and control of corrosion. Modification of surface properties of metals to develop resistance to corrosion, wear, tear, impact etc. by electroplating and lectroless plating.
CO3	Apply the knowledge for Production & consumption of energy for industrialization of country and living standards of people. Utilization of solar energy for different useful forms of energy.
CO4	Analyse the engineering chemistry problems related to Environmental pollution waste management and water chemistry
CO5	Understand and explain different techniques of instrumental method of analysis, Fundamental principles of nanomaterial.

CO-PO-PSO Mapping

COs	POs														
	1	2	3	4	5	6	7	8	9	10	11	12			
CO1	3														
CO2	3														
CO3	3														
CO4	3														
CO5							2								
Average	3						2								

Subject: Engineering Chemistry Lab	**Subject Code:** 17CHEL17/27

Course Outcomes

CO1	Handling different types of instruments for analysis of materials using small quantities of materials involved for quick and accurate results.
CO2	Carrying out different types of titrations for estimation of concerned in materials using comparatively more quantities of materials involved for good results

CO-PO-PSO Mapping

COs	POs														
	1	2	3	4	5	6	7	8	9	10	11	12			
CO1	2														
CO2	2														
Average	2														

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Department of Information Science and Engineering

Course Outcomes and CO-PO-PSO Articulation Matrix

Semester-I/II

Subject: Programming in C and Data Structures (ISE)	**Subject Code:** 17PCD13/23
Course Outcomes	
CO1	Achieve knowledge of design and development of C problem solving skills
CO2	Apply the basic principles of programming in C Language
CO3	Design and develop modular programming skills
CO4	Demonstrate structures and files in C programming concepts
CO5	Illustrate the basic concepts of pointers and data structures

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	3	2	2	2	1	1									
CO2	3	3	2	3											
CO3	2	3	3	2	3										
CO4	2	3	3	2											
Average	3	2	2	2						1					
	2.6	**2.6**	**2.4**	**2.2**	**2**	**1**				**1**					

Subject: Computer Programming	**Subject Code:** 17CPL16/26
Course Outcomes	
CO1	Understanding the knowledge of simple application in C using condition statements and looping concepts
CO2	Ability to demonstrate and implement applications using arrays & strings
CO3	Apply the knowledge efficiently by adopting the various features of C functions, structures, pointers and files.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	3	2		2									3	2	
CO2	2	2											2	2	
CO3	3	2										3	3	2	
Average	2.67	2		2								3	2.67	2	

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Course Outcomes and CO-PO-PSO Articulation Matrix

Semester-I/II

Subject: Elements of Civil Engineering and Mechanics	**Subject Code:** 17CIV13/23
Course Outcomes	
CO1	Understand various fields of Civil Engineering, Importance of Infrastructural Development & its significances
CO2	Determine the resultant of given force systems and analyzing bodies with rough surface of contact
CO3	Compute the reactive forces in beams & the effects that develop as a result of the external loads
CO4	Locate the Centroid & compute Moment of Inertia of Regular & Built up Sections
CO5	Categorize the various types of motion of bodies and illustrating through numerical problems

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	2														
CO2	3	3													
CO3	3	3													
CO4	3	3													
	2	2													
Average	**2.6**	**2.75**													

Subject: Environmental Studies	**Subject Code: 17CIV18/28**
Course Outcomes	
CO1	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale
CO2	Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment
CO3	Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components
CO4	Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues
CO-PO-PSO Mapping	

Cos	Pos												PSOs		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1						1	2					1			
CO2						1	2					1			
CO3						1	2					1			
CO4						1	2					1			
Average						1	2					2			

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Department of Computer Science and Engineering

Course Outcomes and CO-PO-PSO Articulation Matrix

Semester-I/II

Subject: Programming in C and Data Structures	**Subject Code:** 17PCD13/23
Course Outcomes	
CO1	Achieve knowledge, with respect to the development of C problem solving skills.
CO2	Understanding and analyzing basic principles of programming in C language
CO3	Design and development of various programming skills
CO4	Effective utilization of memory using pointer techniques.
CO5	Understand the basic concepts of pointer and data structures

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	3		1									1	3		1
CO2	1	2											1	2	
CO3	1		2										1		2
CO4	1	2											1	2	
Average	3	1										1	3	1	
	1.8	**1.7**	**1**									**1**	**1.8**	**1.7**	**1**

Subject: Computer Programming	**Subject Code:** 17CPL16/26
Course Outcomes	
CO1	Understanding the knowledge of simple application in C using condition statements and looping concepts
CO2	Ability to demonstrate and implement applications using arrays & strings
CO3	Apply the knowledge efficiently by adopting the various features of C functions, structures, pointers and files.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	3	2		2									3	2	
CO2	2	2											2	2	
CO3	3	2										3	3	2	
Average	**2.67**	**2**		**2**								**3**	**2.67**	**2**	

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Course Outcomes and CO-PO-PSO Articulation Matrix

Semester-I/II

Subject: Elements of Mechanical Engineering		**Subject Code:** 17ME14/24
Course Outcomes		
CO1	Identify different sources of energy and their conversion process	
CO2	Describe the working of boilers, hydraulic turbines and pumps	
CO3	Discuss the working of IC engines, principle of efrigeration & air-conditioning.	
CO4	Distinguish the types of engineering materials, metal joining processes and types of power transmission elements like gear and belt drives	
CO5	Categorize different types of lathe & milling machine operations, Robotic configurations	

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	3	2	2				1								
CO2	2	2													
CO3	3	2													
CO4	3	3	2												
CO5	2	2													
Average	**2.6**	**2.2**	**2**				**1**								

Subject: Workshop Practice		**Subject Code:** 17WSL16/26
Course Outcomes		
CO1	Demonstrate and produce different types of fitting models	
CO2	Gain knowledge of development of sheet metal models with an understanding of their applications	
CO3	Perform soldering and welding of different sheet metal and welded joints	
CO4	Understand the basics of workshop practices	

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	3								2				3		
CO2	2								2				2		
CO3	3								2				3		
CO4	2											2	2		
Average	**2.5**								**2**			**2**	**2.5**		

Subject: COMPUTER AIDED ENGINEERING DRAWING		**Subject Code:**17CED14/24
Course Outcomes		
CO1	Analyze orthogonal projection principles, dimensions and annotations in engineering drawing	
CO2	Generate engineering drawings as per BIS codes and conventions	
CO3	Develop computerized drawings using 2D drafting packages	
CO4	Build geometric objects using development of lateral surfaces	
CO5	Convert orthographic views into Isometric projection	

CO-PO-PSO Mapping

Cos	POs												PSOs		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3												3		
CO2		3												3	
CO3			3		3							1			3
CO4					3							1			
CO5					3							1			
Average	3	3	3		3							1	3	3	3

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Department of Mechanical Engineering
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Department of Electronics and Communication Engineering

Course Outcomes and CO-PO-PSO Articulation Matrix

Semester-I/II

Subject: Basic Electronics		**Subject Code:** 17ELN15/25
Course Outcomes		
CO1	Ability to apply the applications of diode in rectifiers, filter circuits and BJT.	
CO2	Ability to analyse the biasing of BJT. Design simple circuits like amplifiers (inverting and non inverting), comparators, adders, integrator and differentiator using OPAMPS	
CO3	Understand the basic concepts of number systems .Design different building blocks in digital electronics using logic gates and implement simple logic function using basic universal gates	
CO4	Analyse the functioning of flip-flops. Describe the architecture and interfacing of microcontroller	
CO5	Understand the functioning of a communication system, analyze different modulation technologies. Understand the basic principles of different types of Transducers.	

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	2	2											2		
CO2	2	2	2										2		
CO3	2	2	2										2		
CO4	2	2											2		
CO5	2	2											2		
Average	**2**	**2**	**2**										**2**		

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Department of Electrical & Electronics Engineering

Course Outcomes and CO-PO-PSO Articulation Matrix

Semester-I/II (Aca. Year 2017-18)

Subject: Basic Electrical Engineering		**Subject Code:** 17ELE15/25
Course Outcomes		
CO1	Understand the basic concepts of DC circuits and Magnetic circuits and also able to solve problems related to DC and magnetic circuits.	
CO2	Analysis of Single Phase and three phase AC Circuits and the representation of alternating quantities and also determining the power and other parameters in these circuits	
CO3	Explain the construction, basic principle of operation, applications and also determine performance parameters of electrical Machines.	
CO4	Practice Electrical Safety Rules & standards and types of electrical wiring and domestic earthing.	

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	3														
CO2	3	2													
CO3	3	2													
CO4	2					2		2							
Average	**2.75**	**2**				**2**		**2**							

Co-ordinator
Mr. Kubera U

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Dr. Babu N V

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