

**S J B Institute of Technology**

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

Affiliated to Visvesvaraya Technological University, Belagavi. Approved by AICTE, New Delhi.  
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## Department of Mathematics

### **Course Outcomes and CO-PO-PSO Articulation Matrix**

### **Semester-I/II**

<b>Subject:</b> Engg. Mathematics - II		<b>Subject Code:</b> 17MAT21
<b>Course Outcomes</b>		
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 inertia 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
C01	3	2													
C02	3	3													
C03	3	2													
C04	3	3													
C05	3	2													
Average	3	2.6													



HOD

**Dr. Padmaja Venugopal, Ph.D.**  
 Professor and Head  
 Department of Mathematics  
 S.J B Institute of Technology  
 # 67, BGS Health & Education City,  
 Uttarahalli Road, Kengeri, Bangalore-60.



I Jai Sri Gurudev II  
Sri Adichunchanagiri Shikshana Trust ®

# SJB Institute of Technology



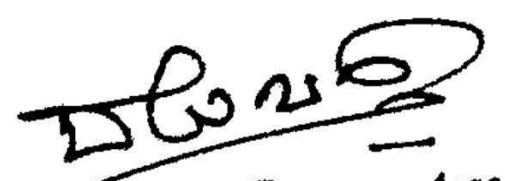
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**BGS Health and Education City, Kengeri, Bangalore-560 060**

## Course Outcomes and CO-PO-PSO Articulation Matrix

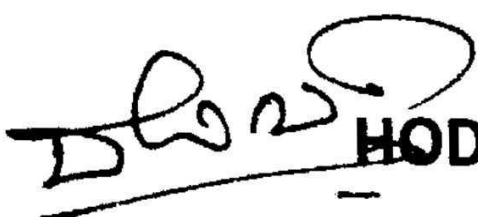
### Semester-I/II

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  
SJB Institute of Technology  
BGS Health & Education City  
Kengeri, Bangalore-560 060



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											

  
HOD

**Head of the Department**  
Department of Physics  
SJB Institute of Technology  
BGS Health & Education City  
Kengeri, Bangalore-560 060





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## Department of Chemistry

### 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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Head of the Department  
Department of Chemistry  
SJB Institute of Technology  
BGS Health & Education City  
Kengeri, Bengaluru - 560060



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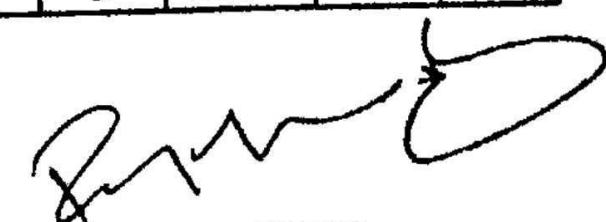
## Department of Information Science and Engineering

### 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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Dept. of Information Science & Engineering  
S.J.B. Institute of Technology  
Kengeri, Bangalore-560 060.







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			

*K. M. R. S. S.*

**HOD**  
Head of Department  
Department of Civil Engineering  
S J B Institute of Technology  
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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

<b>Subject:</b> Computer Programming													<b>Subject Code:</b> 17CPL16/26		
<b>Course Outcomes</b>															
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.														
<b>CO-PO-PSO Mapping</b>															
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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**Head of the Department**  
Dept. of Computer Science and Engineering  
**SJB INSTITUTE OF TECHNOLOGY**  
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No. 67, Uttarahalli Road,  
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## Department of Mechanical Engineering

### Course Outcomes and CO-PO-PSO Articulation Matrix

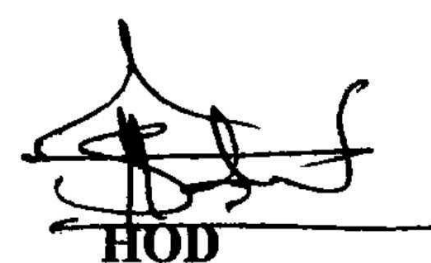
#### Semester-I/II

<b>Subject:</b> Elements of Mechanical Engineering							<b>Subject Code:</b> 17ME14/24								
<b>Course Outcomes</b>															
<b>CO1</b>	Identify different sources of energy and their conversion process														
<b>CO2</b>	Describe the working of boilers, hydraulic turbines and pumps														
<b>CO3</b>	Discuss the working of IC engines, principle of efrigeration & air-conditioning.														
<b>CO4</b>	Distinguish the types of engineering materials, metal joining processes and types of power transmission elements like gear and belt drives														
<b>CO5</b>	Categorize different types of lathe & milling machine operations, Robotic configurations														
<b>CO-PO-PSO Mapping</b>															
<b>COs</b>	<b>POs</b>												<b>PSOs</b>		
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>CO1</b>	3	2	2				1								
<b>CO2</b>	2	2													
<b>CO3</b>	3	2													
<b>CO4</b>	3	3	2												
<b>CO5</b>	2	2													
<b>Average</b>	<b>2.6</b>	<b>2.2</b>	<b>2</b>				<b>1</b>								

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



Department of Mechanical Engineering  
 SJB Institute of Technology  
 Kengeri, Bengaluru-560 060



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## Department of Electronics and Communication Engineering

### Course Outcomes and CO-PO-PSO Articulation Matrix

#### Semester-I/II

<b>Subject:</b> Basic Electronics								<b>Subject Code:</b> 17ELN15/25							
<b>Course Outcomes</b>															
<b>CO1</b>	Ability to apply the applications of diode in rectifiers, filter circuits and BJT.														
<b>CO2</b>	Ability to analyse the biasing of BJT. Design simple circuits like amplifiers (inverting and non inverting), comparators, adders, integrator and differentiator using OPAMPS														
<b>CO3</b>	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														
<b>CO4</b>	Analyse the functioning of flip-flops. Describe the architecture and interfacing of microcontroller														
<b>CO5</b>	Understand the functioning of a communication system, analyze different modulation technologies. Understand the basic principles of different types of Transducers.														
<b>CO-PO-PSO Mapping</b>															
<b>COs</b>	<b>POs</b>												<b>PSOs</b>		
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>CO1</b>	2	2											2		
<b>CO2</b>	2	2	2										2		
<b>CO3</b>	2	2	2										2		
<b>CO4</b>	2	2											2		
<b>CO5</b>	2	2											2		
<b>Average</b>	<b>2</b>	<b>2</b>	<b>2</b>										<b>2</b>		

**HOD**  
Head

Dept. of Electronics & Communication Engg  
SJB Institute of Technology  
Bengaluru-560060





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## SJB Institute of Technology

(A Constituent of BGS & SJB Group of Institutions and Hospitals)

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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

Dr. Babu N V

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Dept. of EEE

S J B Institute of Technology  
BGS Health & Education City,  
Kengeri, Bengaluru-560 060.