



**|| JAI SRI GURUDEV ||**  
**Sri Adhichunchanagiri Shikshana Trust(R)**



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

[illegible]

<b>Subject:</b> Advanced Calculus and Numerical Methods		<b>Subject Code:</b> 18MAT21
<b>Course Outcomes</b>		
CO1	Illustrate the application of multivariate calculus to understand the solenoidal and irrotational vectors and also exhibit the interdependence of line, surface and volume integrals	
CO2	Demonstrate various physical models through higher order differential equations and solve such linear ordinary differential equations and solve linear ordinary differential equations	
CO3	Construct a variety of partial differential equations and solutions by exact methods /method of separation of variables	
CO4	Explain the application of infinite series and obtain series solution of ordinary differential equations	
CO5	Apply the knowledge of numerical in the modeling of various physical and engineering phenomena.	

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	2													
CO3	3	2													
CO4	3	2													
CO5	3	2													
Average	3	2													



**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.



# S J B Institute of Technology

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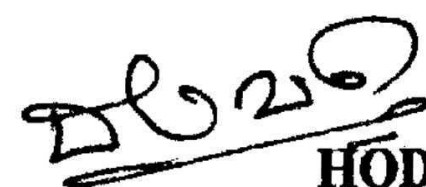
## Department of Physics

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

#### Semester-I/II

Subject: Engineering Physics										Subject Code:18PHY12/22					
Course Outcomes															
CO1	Understand various types of oscillations and their implications, the role of Shock waves in various fields and recognize the elastic properties of materials for engineering applications.														
CO2	Realize the interrelation between time varying electric field and magnetic field, the transverse nature of the EM waves and their role in optical fiber communication.														
CO3	Compute Eigen values, Eigen functions of Atomic and subatomic particles using Time independent 1-D Schrodinger's wave equation														
CO4	Apprehend theoretical background of laser, construction and working of different types of laser and its applications in different fields														
CO5	Understand various electrical properties of materials like conductors, semiconductors and dielectrics using different theoretical models.														
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	1													
CO4	2	2													
CO5	2	2													
Average	2	1.8													

Subject: Engineering Physics Lab										Subject Code: 18PHY16/26					
Course Outcomes															
CO1	Apprehend the concepts of elasticity and Resonance.														
CO2	Apply the basic phenomenon and principles of optics.														
CO3	Understand the principles of operations of semiconductor devices, dielectrics and concepts of Fermi energy and magnetic effect of electric current.														
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											
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:18CHE12/22						
Course Outcomes																
CO1	Understand and explain the principle of thermodynamics in electrochemical energy systems and analyze engineering problems related to corrosion, metal finishing.															
CO2	Apply the knowledge for production and consumption of energy available in different form.															
CO3	Identifying the presence of chemical species causing Environmental pollution and their determination.															
CO4	Study of instrumental methods for chemical analysis and nano scale materials.															
CO-PO-PSO Mapping																
COs	POs															
	1	2	3	4	5	6	7	8	9	10	11	12				
CO1	3															
CO2	3															
CO3							2									
CO4	3															
Average	3						2									

Subject: Engineering Chemistry Lab										Subject Code: 18CHEL16/26						
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															

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





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## SJB Institute of Technology

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

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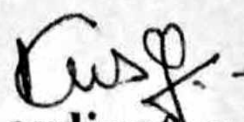
### Department of Electrical & Electronics Engineering


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

##### Semester-I/II ( Aca. Year 2018-19)

Subject: Basic Electrical Engineering										Subject Code: 18ELE13/23					
Course Outcomes															
CO1	To understand the basic concepts of DC, AC circuits and Electrical Machines and able to solve the problems related to DC and AC 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	Apply the basic knowledge of mathematics, science and electrical engineering to obtain the desired parameters/performance characteristics of Transformer and Electric Machines														
CO4	Conduct a study on safety aspects, wiring and consumption of electrical power in domestic installations														
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	2													
CO3	3	2													
CO4	2					2		2							
Average	2.75	2				2		2							

Subject: Basic Electrical Engineering Lab										Subject Code: 18ELEL17/27					
Course Outcomes															
CO1	Identify the common electrical components and measuring instruments used for conducting experiments in the electrical laboratory.														
CO2	Compare power factor of lamps.														
CO3	Determine impedance of an electrical circuit and power consumed in a 3-phase load.														
CO4	Determine earth resistance and understand two way and three-way control of lamps.														
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				1			1	1					
CO2	3	2				1			1	1					
CO3	3	2				1			1	1					
CO4	3	2				1			1	1					
Average	3	2				1			1	1					

  
Co-ordinator  
Mr. Kubera U

  
HOD  
Dr. Babu N V

HOD  
Dept. of EEE

S J B Institute of Technology  
BGS Health & Education City,  
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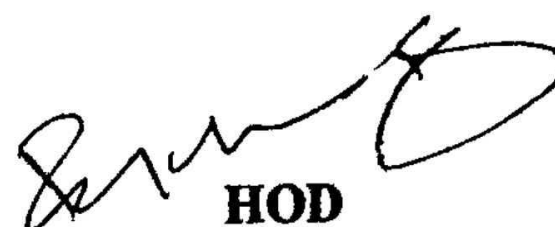
## Department of Information Science and Engineering

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

#### Semester-I/II

Subject: C Programming for Problem Solving											Subject Code: 18CPS13/23				
Course Outcomes															
CO1	Achieve the knowledge of computer parts, generation and networking.														
CO2	Understand basic principles of programming in c language.														
CO3	Design and development of modular programming skills.														
CO4	Effective utilization of memory using pointer technology.														
CO5	Understand the basic concepts of recursion and preprocessor directives.														
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													
CO4			2						2						
CO5			2						2						
Average	2	2	2						2			2			

Subject: C Programming lab (ISE)											Subject Code: 18CPL17/27				
Course Outcomes															
CO1	Understand the knowledge on simple applications in C using conditional statements and looping concepts.														
CO2	Demonstrate and implement applications using arrays and strings.														
CO3	Apply knowledge on functions, recursions, pointers and 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											
CO2	3	3	2	2											
CO3	3	3	3	3	1										
Average	3	2.67	2.33	2.33	1.0										

  
HOD

Head of the Department  
Dept. of Information Science & Engineering  
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## Department of Computer Science and Engineering

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

#### Semester-I/II

Subject: C Programming for Problem Solving										Subject Code: 18CPS13/23					
Course Outcomes															
CO1	Exploring the concepts of computers and problem solving skills..														
CO2	Understand basic principles of programming in c language.														
CO3	Design and development of modular programming skills.														
CO4	Effective utilization of memory using pointer technology.														
CO5	Understand the basic concepts of recursion and pre-processor directives.														
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													
CO4			2						2						
CO5			2						2						
Average	2	2	2						2			2			

Subject: C Programming lab (ISE)											Subject Code: 18CPL17/27				
Course Outcomes															
CO1	Understand the knowledge on simple applications in C using conditional statements and looping concepts.														
CO2	Demonstrate and implement applications using arrays and strings.														
CO3	Apply knowledge on functions, recursions, pointers and 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											
CO2	3	3	2	2											
CO3	3	3	3	3	1										
Average	3	2.67	2.33	2.33	1.0										

*Allee*  
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Head of the Department  
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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> 18ELN14/24								
<b>Course Outcomes</b>															
<b>CO1</b>	Describe the operation of diodes, BJT and FET . Describe general operating principles of SCR's and its application														
<b>CO2</b>	Design and explain the construction of rectifiers, regulators, amplifiers and Oscillators.														
<b>CO3</b>	Explain the working and design different types of operational amplifiers.														
<b>CO4</b>	Explain the working and design of fixed voltage IC regulator using 7805 and A stable oscillator using timer IC 555. Understand the basic principle of operation of communication system and mobile phones.														
<b>CO5</b>	Recall and explain the different number system and their conversions. Construct simple combinational and sequential circuits using flipflops.														
<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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## Department of Civil Engineering

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

#### Semester-I/II

<b>Subject:</b> Elements of Civil Engineering and Mechanics										<b>Subject Code:</b> 18CIV14/24					
<b>Course Outcomes</b>															
<b>CO1</b>	Understand of various fields of civil Engineering & Importance of Infrastructure Development.														
<b>CO2</b>	Analyse the resultant of given force system subjected to various loads & application of Engineering Mechanics in Civil Engineering.														
<b>CO3</b>	Understand the Action of forces, Moments & other Loads on Rigid bodies & Analyze the reactive forces that develop as a result of external Loads.														
<b>CO4</b>	Understand the concept of centroid & moment of Inertia & Applying it to regular & Built up Sections as per Architecture.														
<b>CO5</b>	Understand the terms for the description of motion of particles, Fundamental Newton laws, motion of projectile in absence of air.														
<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						1								
<b>CO2</b>	3	3													
<b>CO3</b>	3	3													
<b>CO4</b>	3	3													
<b>CO5</b>	2	2													
<b>Average</b>	<b>2.6</b>	<b>2.75</b>					<b>1</b>								

*Amritha*

**HOD**

Head of Department  
Department of Civil Engineering  
S J B Institute of Technology  
Uttarahalli Road, Kengeri  
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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> 18ME15/25					
<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 refrigeration & 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>	2						2					2			
<b>CO2</b>	2											2			
<b>CO3</b>	2	2	1				2					2			
<b>CO4</b>	2	2										1			
<b>CO5</b>	2				2							2			
<b>Average</b>	<b>2</b>	<b>2</b>	<b>1</b>		<b>2</b>		<b>2</b>					<b>1.8</b>			

Subject: Engineering Graphics										Subject Code: 18EGDL15/25					
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			3							1			
CO2	3	3			3							1			
CO3	3	3			3							1			
CO4	3	3			3							1			
CO5	3	3			3							1			
Average	3	3			3							1			

Department of Mechanical Engineering  
SJB Institute of Technology  
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Subject: Technical English – I										Subject Code: 18EGH18					
Course Outcomes															
CO1	Use Grammatically English and essentials of language skills & identify the nuances of Phonetics, intonation & flawless pronunciation.														
CO2	Implement English vocabulary at command & language proficiency.														
CO3	Identify common errors in spoken & written.														
CO4	Understand & improve the non verbal communication and kinesics.														
CO5	Perform well in campus recruitment and all other general competitive examinations.														
CO-PO-PSO Mapping															
Cos	Pos												PSOs		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1										2		1			
CO2										2		1			
CO3										2		1			
CO4										2		1			
CO5										2		1			
Average										2		1			

Subject: Technical English – II										Subject Code: 18EGH28						
Course Outcomes																
CO1	Use grammatical English and essentials of language skills and identify the nuances of phonetics, intonation and flawless pronunciation.															
CO2	Implement English vocabulary at command and language proficiency.															
CO3	Identify common errors in spoken and written communication.															
CO4	Understand and improve the non-verbal communication and kinesics.															
CO5	Perform well in campus recruitment, engineering and all other general competitive examinations.															
CO-PO-PSO Mapping																
Cos	Pos												PSOs			
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
CO1										2		1				
CO2										2		1				
CO3										2		1				
CO4										2		1				
CO5										2		1				
Average										2		1				

Renuka

FACULTY INCHARGE

[Renuka Prabod]

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