



B.E. in Information Science & Engineering

SCHEME OF TEACHING AND EVALUATION 2024

OUTCOME BASED EDUCATION (OBE) AND CHOICE BASED CREDIT SYSTEM (CBCS)

(2024 SCHEME: EFFECTIVE FROM THE ACADEMIC YEAR 2025 - 26)

III SEMESTER

Sl. No.	Course Type	Course Code	Course Title	Teaching Department (TD)	Question Paper Setting Board (PSB)	Teaching Hours/ Week				Examination				Credits
						Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIA Marks	SEE Marks	Total Marks	
						L	T	P	S					
1	BSC	BMA301TC	COMPUTATIONAL DISCRETE MATHEMATICS	BS	BS	03	00	00	04	03	50	50	100	03
2	IPCC	BIS302G	DIGITAL LOGIC DESIGN AND COMPUTER ORGANIZATION	ISE	ISE	03	00	02	04	03	50	50	100	04
3	IPCC	BIS303G	OBJECT ORIENTED PROGRAMMING USING JAVA	ISE	ISE	03	00	02	04	03	50	50	100	04
4	PCC	BIS304T	DATA STRUCTURES AND APPLICATIONS	ISE	ISE	03	00	00	04	03	50	50	100	03
5	PCCL	BIS305L	DATA STRUCTURES LABORATORY WITH C	ISE	ISE	00	00	02	01	03	50	50	100	01
6	ESC/ ETC/PLC	BIS306Wx	ENGINEERING SCIENCE COURSE/ EMERGING TECHNOLOGY COURSE/ PROGRAMMING LANGUAGE COURSE	ISE	ISE	03	00	00	04	03	50	50	100	03
7	HSSC	BHU307TK	UHV-1: SOCIAL CONNECT AND RESPONSIBILITIES	BS	BS	01	00	00	02	01	50	50	100	01
8	AEC/SEC	BIS308Ax/ BBA308Ax	ABILITY ENHANCEMENT COURSE - I/ SKILL ENHANCEMENT COURSE - I	ISE / BA	ISE / BA	00 01	00 00	02 00	01 02	03	50	50	100	01
9	NCMC	BNS309NK	NATIONAL SERVICE SCHEME (NSS)	NSS Coordinator / Physical Education Director / Yoga Teacher/ Music Teacher	00	00	02	00	00	100	---	100	00	
		BPE309NK	PHYSICAL EDUCATION (PE) (SPORTS AND ATHLETICS)											
		BYO309NK	YOGA											
		BMU309NK	MUSIC											
TOTAL											500	400	900	20

ESC/ETC/PLC																
BIS306W1		PROMPT ENGINEERING				BIS306W3		LINUX SYSTEM PROGRAMMING								
BIS306W2		ETHICAL HACKING AND CYBER SECURITY				BIS306W4		COMPUTER GRAPHICS AND VISUALIZATION								
ABILITY ENHANCEMENT COURSE - I / SKILL ENHANCEMENT COURSE - I																
BIS308A1		BASICS OF WEB PROGRAMMING: HTML AND CSS				BIS308A3		PROJECT MANAGEMENT WITH GIT								
BIS308A2		DEVOPS FOR BEGINNERS				BBA308A4		TAX MANAGEMENT								
COURSE PRESCRIBED TO LATERAL ENTRY DIPLOMA HOLDERS ADMITTED TO THE III SEMESTER OF THE B.E. PROGRAMS																
1	NCMC	BMA310NK	ADDITIONAL MATHEMATICS - I			BS	BS	03	00	00	01	03	50	50	100	00
Note: BSC: Basic Science Course, IPCC: Integrated Professional Core Course, PCC: Professional Core Course, PCCL: Professional Core Course Laboratory, AEC: Ability Enhancement Course, UHV: Universal Human Value Course, SEC: Skill Enhancement Course, ESC: Engineering Science Course, ETC: Emerging Technology Course, PLC: Programming Language Course, NCMC: Non Credit Mandatory Course L – Lecture, T – Tutorial, P - Practical/ Drawing, S – Self -Study Component, CIA: Continuous Internal Assessment, SEE: Semester End Examination, TD - Teaching Department, PSB: Paper Setting Board, ISE: Information Science & Engineering, BS: Basic Science, BA: Business Administration																
Integrated Professional Core Course (IPCC): Refers to the Professional Theory Core Course Integrated with the Practical of the same course. Credit for IPCC can be 04, and its Teaching–Learning hours (L: T: P) can be considered as (3: 0: 2) or (2: 2: 2). The theory part of the IPCC shall be evaluated both by CIA and SEE. The practical part shall be evaluated by only the CIA (no SEE). However, questions from the practical part of the IPCC shall be included in the SEE question paper.																
Non–Credit Mandatory Courses (NCMC): A. National Service Scheme (NSS) / Physical Education (Sport and Athletics) (PED) / Yoga/ Music: 1) All students have to register for any one of the courses (as per the choice of the student) with the concerned coordinator of the course during the first week of the III semester, and Activities shall be carried out by the student in the registered course. 2) The events shall be appropriately scheduled, and the same shall be reflected in the Institute's Academic and Activity Calendar. The course will be evaluated only for the CIA marks and will not have a SEE component. 3) Securing 50% or more in the CIA leads to successful completion of the registered course. 4) In case any student fails to register for NSS, PE, Yoga, or Music fails to secure the minimum requirements as mentioned in (B).1, they shall be awarded with NP Grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s. 5) Successful completion of the course shall be indicated with a PP Grade in the grade card. 6) These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of the degree. B. Additional Mathematics I: 1) This course is prescribed in the III semester for the lateral entry Diploma holders admitted to the second year of the B.E. programs. 2) They shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the Continuous Internal Assessment (CIA). 3) This course is slated for both CIA and SEE. 4) This course shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of the degree. 5) Successful completion of the course shall be indicated with a Pass (PP) grade in the grade card. Non-completion of the courses will lead to the award of a Not Pass (NP) Grade. 6) In case any student fails to register for the said course/fails to secure a minimum of 40% of the prescribed CIA marks and 35% of the prescribed SEE marks, they shall be deemed to have secured an NP grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s.																



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(2024 SCHEME: EFFECTIVE FROM THE ACADEMIC YEAR 2025 - 26)

IV SEMESTER

Sl. No.	Course Type	Course Code	Course Title	Teaching Department (TD)	Question Paper Setting Board (PSB)	Teaching Hours/ Week				Examination				Credits
						Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIA Marks	SEE Marks	Total Marks	
1	IPCC	BIS401G	EMBEDDED SYSTEM DESIGN WITH ARM AND INTERNET OF THINGS	ISE	ISE	03	00	02	04	03	50	50	100	04
2	IPCC	BIS402G	OPERATING SYSTEMS	ISE	ISE	03	00	02	04	03	50	50	100	04
3	PCC	BIS403T	SOFTWARE ENGINEERING AND PROJECT MANAGEMENT	ISE	ISE	03	00	00	04	03	50	50	100	03
4	PCC	BIS404T	DESIGN AND ANALYSIS OF ALGORITHMS	ISE	ISE	03	00	00	04	03	50	50	100	03
5	PCCL	BIS405L	DESIGN AND ANALYSIS OF ALGORITHMS LABORATORY	ISE	ISE	00	00	02	01	03	50	50	100	01
6	ESC	BCS406Wx/ BIS406Wx	MATHEMATICS COURSE SPECIFIC TO THE PROGRAM	BS/ISE	BS/ISE	03	00	00	04	03	50	50	100	03
7	HSSC	BHU407TK	UHV-2: UNDERSTANDING HARMONY AND ETHICAL CONDUCT	BS	BS	01	00	00	02	01	50	50	100	01
8	AEC/SEC	BIS408Ax/ BBA408Ax	ABILITY ENHANCEMENT COURSE - II/ SKILL ENHANCEMENT COURSE - II	ISE / BA	ISE / BA	00 01	00 00	02 00	01 02	03	50	50	100	01
9	BSC	BBS409TC	BIOLOGY FOR IT ENGINEERS	BS	BS	02	00	00	03	03	50	50	100	02
10	NCMC	BNS410NK	NATIONAL SERVICE SCHEME (NSS)	NSS Coordinator / Physical Education Director / Yoga Teacher/ Music Teacher		00	00	02	00	00	100	---	100	00
		BPE410NK	PHYSICAL EDUCATION (PE) (SPORTS AND ATHLETICS)											
		BYO410NK	YOGA											
		BMU410NK	MUSIC											
TOTAL											550	450	1000	22

ESC/ETC/PLC																	
BCS406W1		ADVANCED GRAPH THEORY					BCS406W3		METRIC SPACES								
BCS406W2		LINEAR ALGEBRA					BIS406W4		PROBABILITY AND STATISTICS								
ABILITY ENHANCEMENT COURSE - II / SKILL ENHANCEMENT COURSE - II																	
BIS408A1		JAVASCRIPT ESSENTIALS					BIS408A3		JIRA FUNDAMENTALS								
BIS408A2		CI/CD PIPELINE					BBA408A4		FINANCIAL MANAGEMENT								
COURSE PRESCRIBED TO LATERAL ENTRY DIPLOMA HOLDERS ADMITTED TO III SEMESTER B.E. PROGRAMS																	
1	NCMC	BMA411NK	ADDITIONAL MATHEMATICS - II				BS	BS	02	00	00	01	03	50	50	100	00
Note: BS: Basic Science Course, IPCC: Integrated Professional Core Course, PCC: Professional Core Course, PCCL: Professional Core Course Laboratory, AEC: Ability Enhancement Course, UHV: Universal Human Value Course, SEC: Skill Enhancement Course, ESC: Engineering Science Course, ETC: Emerging Technology Course, PLC: Programming Language Course, NCMC: Non Credit Mandatory Course L – Lecture, T – Tutorial, P - Practical/ Drawing, S – Self -Study Component, CIA: Continuous Internal Assessment, SEE: Semester End Examination, TD- Teaching Department, PSB: Paper Setting Board, ISE: Information Science & Engineering, BS: Basic Science, BA: Business Administration.																	
Integrated Professional Core Course (IPCC): Refers to the Professional Theory Core Course Integrated with the Practical of the same course. Credit for IPCC can be 04, and its Teaching– Learning hours (L: T: P) can be considered as (3: 0: 2) or (2: 2: 2). The theory part of the IPCC shall be evaluated both by CIA and SEE. The practical part shall be evaluated by only the CIA (no SEE). However, questions from the practical part of the IPCC shall be included in the SEE question paper.																	
Non–Credit Mandatory Courses (NCMC): A. National Service Scheme (NSS) / Physical Education (Sport and Athletics) (PED) / Yoga/ Music: 1) All students have to register for any one of the courses (as per the choice of the student) with the concerned coordinator of the course during the first week of the IV semester, and Activities shall be carried out by the student in the registered course. 2) The events shall be appropriately scheduled, and the same shall be reflected in the Institute's Academic and Activity Calendar. The course will be evaluated only for the CIA marks and will not have a SEE component. 3) Securing 50% or more in the CIA leads to successful completion of the registered course. 4) In case any student fails to register for NSS, PE, Yoga, or Music fails to secure the minimum requirements as mentioned in (B).1, they shall be awarded with NP Grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s. 5) Successful completion of the course shall be indicated with a PP Grade in the grade card. 6) These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of the degree. B. Additional Mathematics II: 1) This course is prescribed in the IV semester for the lateral entry Diploma holders admitted to the second year of the B.E. programs. 2) They shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the Continuous Internal Assessment (CIA). 3) This course is slated for both CIA and SEE. 4) This course shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of the degree. 5) Successful completion of the course shall be indicated with a Pass (PP) grade in the grade card. Non-completion of the courses will lead to the award of a Not Pass (NP) Grade. 6) In case, any student fails to register for the said course/fails to secure a minimum of 40% of the prescribed CIA marks and 35% of the prescribed SEE marks, they shall be deemed to have secured an NP grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s.																	



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(2024 SCHEME: EFFECTIVE FROM THE ACADEMIC YEAR 2025 - 26)

V SEMESTER

Sl. No.	Course Type	Course Code	Course Title	Teaching Department (TD)	Question Paper Setting Board (PSB)	Teaching Hours/ Week				Examination				Credits
						Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIA Marks	SEE Marks	Total Marks	
						L	T	P	S					
1	IPCC	BIS501G	DATA SCIENCE AND VISUALIZATION	ISE	ISE	03	00	02	04	03	50	50	100	04
2	IPCC	BIS502G	DATA COMMUNICATIONS AND NETWORKING	ISE	ISE	03	00	02	04	03	50	50	100	04
3	PCC	BIS503T	AUTOMATA THEORY AND COMPUTABILITY	ISE	ISE	03	00	00	04	03	50	50	100	03
4	PCC	BIS504T	DATABASE MANAGEMENT SYSTEM	ISE	ISE	03	00	00	05	03	50	50	100	03
5	PCCL	BIS505L	DATABASE MANAGEMENT SYSTEM LABORATORY	ISE	ISE	00	00	02	01	03	50	50	100	01
6	PEC	BIS506Ex	PROFESSIONAL ELECTIVE COURSE - I	ISE	ISE	03	00	00	05	03	50	50	100	03
7	PROJ	BIS507P	MINI PROJECT WORK	ISE	ISE	00	00	04	00	03	50	-	50	02
8	AEC	BBS508AK	RESEARCH METHODOLOGY AND INTELLECTUAL PROPERTY RIGHTS	Any Dept.	Any Dept.	01	00	00	00	02	50	50	100	01
9	BSC	BBS509TK	ENVIRONMENTAL STUDIES	BS	BS	01	00	00	00	01	50	50	100	01
10	NCMC	BNS510NK	NATIONAL SERVICE SCHEME (NSS)	NSS Coordinator / Physical Education Director / Yoga Teacher/ Music Teacher	00	00	02	00	00	100	---	100	00	
		BPE510NK	PHYSICAL EDUCATION (PE) (SPORTS AND ATHLETICS)											
		BYO510NK	YOGA											
		BMU510NK	MUSIC											
TOTAL											550	400	950	22

PROFESSIONAL ELECTIVE COURSE - I			
BIS506E1	INFORMATION STORAGE AND MANAGEMENT	BIS506E3	DATA WAREHOUSING AND DATA MINING
BIS506E2	OBJECT ORIENTED MODELING AND DESIGN	BIS506E4	JAVA PROGRAMMING FOR MOBILE APPLICATIONS
Note: IPCC: Integrated Professional Core Course, PCC: Professional Core Course, PCCL: Professional Core Course Laboratory, PEC: Professional Elective Course, PROJ: Project Work, AEC: Ability Enhancement Course, BSC: Basic Science Course, NCMC: Non-Credit Mandatory Course, L – Lecture, T – Tutorial, P- Practical/ Drawing, S – Self -Study Component, CIA: Continuous Internal Assessment, SEE: Semester End Examination, TD- Teaching Department, PSB: Paper Setting Board, ISE: Information Science & Engineering, BS: Basic Science, BA: Business Administration			
Integrated Professional Core Course (IPCC): Refers to the Professional Theory Core Course Integrated with the Practical of the same course. Credit for IPCC can be 04, and its Teaching– Learning hours (L: T: P) can be considered as (3: 0: 2) or (2: 2: 2). The theory part of the IPCC shall be evaluated both by CIA and SEE. The practical part shall be evaluated by only the CIA (no SEE). However, questions from the practical part of the IPCC shall be included in the SEE question paper.			
Professional Elective Course (PEC): A Professional Elective Course (PEC) is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students for offering professional electives is 10. However, this condition shall not be applicable to cases where the admission to the program is less than 10.			
Mini Project (PROJ): 1) Securing 50% or more in CIA, 50% in SEE, and 50% or more taken together (CIA+SEE) leads to successful completion of the registered course. 2) The guidelines and the evaluation process shall be as approved by the Board of Studies and the Academic Council of SCEM.			
Non–Credit Mandatory Courses (NCMC): National Service Scheme (NSS) / Physical Education (Sport and Athletics) (PED) / Yoga/ Music: 1) All students have to register for any one of the courses (as per the choice of the student) with the concerned coordinator of the course during the first week of V semester, and Activities shall be carried out by the student in the registered course. 2) The events shall be appropriately scheduled, and the same shall be reflected in the Institute Academic and Activity Calendar. The course will be evaluated only for the CIA marks and will not have a SEE component. 3) Securing 50% or more in the CIA leads to successful completion of the registered course. 4) In case any student fails to register for NSS, PE, Yoga, or Music fails to secure the minimum requirements as mentioned in (B).1, they shall be awarded with NP Grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s. 5) Successful completion of the course shall be indicated with a PP Grade in the grade card. 6) These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of a degree.			



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SCHEME OF TEACHING AND EVALUATION 2024

OUTCOME BASED EDUCATION(OBE) AND CHOICE BASED CREDIT SYSTEM (CBCS)

(2024 SCHEME: EFFECTIVE FROM THE ACADEMIC YEAR 2025 - 26)

VI SEMESTER

Sl. No.	Course	Course Code	Course Title	Teaching Department (TD)	Question Paper Setting Board (PSB)	Teaching Hours/ Week				Examination				Credits
						Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIA Marks	SEE Marks	Total Marks	
						L	T	P	S					
1	IPCC	BIS601G	BIG DATA ANALYTICS	ISE	ISE	03	00	02	04	03	50	50	100	04
2	PCC	BIS602T	INFORMATION RETRIEVAL	ISE	ISE	03	00	00	04	03	50	50	100	03
3	PCC	BIS603T	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	ISE	ISE	03	00	00	04	03	50	50	100	03
4	PEC	BIS604Ex	PROFESSIONAL ELECTIVE COURSE - II	ISE	ISE	03	00	00	04	03	50	50	100	03
5	OEC	BIS605Qx	OPEN ELECTIVE COURSE - I	ISE	ISE	03	00	00	04	03	50	50	100	03
6	PCCL	BIS606L	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING LABORATORY	ISE	ISE	00	00	02	01	03	50	50	100	01
7	PROJ	BIS607P	PROJECT WORK PHASE I	ISE	ISE	00	00	02	03	03	100	---	100	02
8	AEC/SEC	BIS608Ax/ BBA608Ax	ABILITY ENHANCEMENT COURSE - III/ SKILL ENHANCEMENT COURSE - III	ISE/BA	ISE/BA	00	00	02	01	03	50	50	100	01
						01	00	00	02					
9	NCMC	BNS609NK	NATIONAL SERVICE SCHEME (NSS)	NSS Coordinator / Physical Education Director / Yoga Teacher/ Music Teacher		00	00	02	00	02	100	---	100	00
		BPE609NK	PHYSICAL EDUCATION (PE) (SPORTS AND ATHLETICS)											
		BYO609NK	YOGA											
		BMU609NK	MUSIC											
TOTAL											550	350	900	20

PROFESSIONAL ELECTIVE COURSE - II			
BIS604E1	COMPILER DESIGN	BIS604E3	SYSTEM MODELING AND SIMULATION
BIS604E2	OPERATIONS RESEARCH	BIS604E4	CRYPTOGRAPHY
OPEN ELECTIVE COURSE - I			
BIS605Q1	INTRODUCTION TO DATA STRUCTURES	BIS605Q3	INTRODUCTION TO DATABASE MANAGEMENT SYSTEM
BIS605Q2	INFORMATION MANAGEMENT SYSTEM	BIS605Q4	INTRODUCTION TO DATA SCIENCE
ABILITY ENHANCEMENT COURSE - III / SKILL ENHANCEMENT COURSE - III			
BIS608A1	REACT JS FRONTEND WEB DEVELOPMENT	BIS608A3	SCRUM FUNDAMENTALS
BIS608A2	DEVOPS TESTING: UNIT TEST AND SERVER MONITORING	BBA608A4	INVESTMENT MANAGEMENT
Note: IPCC: Integrated Professional Core Course, PCC: Professional Core Course, PCCL: Professional Core Course Laboratory, PEC: Professional Elective Course, OEC: Open Elective Course, PROJ: Project Work, AEC: Ability Enhancement Courses, SEC: Skill Enhancement Course, NMC: Non-Credit Mandatory Course L – Lecture, T – Tutorial, P- Practical/ Drawing, S – Self-Study Component, CIA: Continuous Internal Assessment, SEE: Semester End Examination, TD- Teaching Department, PSB: Paper Setting Board, ISE: Information Science & Engineering, BA: Business Administration			
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Professional Elective Course (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students’ strengths for offering professional electives is 10. However, this condition shall not be applicable to cases where the admission to the program is less than 10.			
Open Elective Courses (OEC): Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition, if any. Registration for open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor. Selection of an Open Elective shall not be allowed if, - The candidate has studied the same course during the previous semesters of the program. - The syllabus content of open electives is similar to that of the Departmental core courses or Professional Elective courses. - A similar course, under any category, is prescribed in the higher semesters of the program. - In case if any department is interested in offering courses from streams such as Law, Business (MBA), Medicine, Arts, Commerce, etc. need to get the necessary approval from the respective Board of Studies and the Academic Council. - The minimum number of students for offering an Open Elective Course is 10. However, this condition shall not be applicable to classes where the admission to the program is less than 10.			
Project Work Phase I (PW): Students have to discuss with their mentors/guides and, with their help has to complete the Literature Review, define the problem statement for the Project Work, and submit an appropriate report. The guidelines and the evaluation process will be defined by the Project Evaluation Committee (PEC) of the department and approved by the Board of Studies and the Academic Council of SCEM.			

Non–Credit Mandatory Courses (NCMC):

National Service Scheme (NSS) / Physical Education (Sport and Athletics) (PED) / Yoga/ Music:

- 1) All students have to register for any one of the courses (as per the choice of the student) with the concerned coordinator of the course during the first week of the VI semester, and Activities shall be carried out by the student in the registered course.
- 2) The events shall be appropriately scheduled, and the same shall be reflected in the Institute Academic and Activity Calendar. The course will be evaluated only for the CIA marks and will not have a SEE component.
- 3) Securing 50% or more in the CIA leads to successful completion of the registered course.
- 4) In case any student fails to register for NSS, PE, Yoga, or Music fails to secure the minimum requirements as mentioned in (B).1, they shall be awarded with NP Grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s.
- 5) Successful completion of the course shall be indicated with a PP Grade in the grade card.
- 6) These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of the degree.

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(2024 SCHEME: EFFECTIVE FROM THE ACADEMIC YEAR 2025 - 26)

Sl. No.	Course	Course Code	Course Title	Teaching Department (TD)	Question Paper Setting Board (PSB)	Teaching Hours/ Week				Examination				Credits
						Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIA Marks	SEE Marks	Total Marks	
						L	T	P	S					
1	IPCC	BIS701G	CLOUD COMPUTING AND SECURITY	ISE	ISE	03	00	02	04	03	50	50	100	04
2	PCC	BIS702T	SOFTWARE TESTING	ISE	ISE	03	00	00	04	03	50	50	100	03
3	PEC	BIS703Ex	PROFESSIONAL ELECTIVE COURSE - III	ISE	ISE	03	00	00	04	03	50	50	100	03
4	OEC	BIS704Qx	OPEN ELECTIVE COURSE - II	ISE	ISE	03	00	00	04	03	50	50	100	03
5	PCCL	BIS705L	SOFTWARE TESTING LABORATORY	ISE	ISE	00	00	02	00	03	50	50	100	01
6	PROJ	BIS706P	PROJECT WORK PHASE II	ISE	ISE	00	00	02	10	03	100	100	200	06
TOTAL											350	350	700	20

BIS703E1	INFORMATION AND NETWORK SECURITY	BIS703E3	NATURAL LANGUAGE PROCESSING
BIS703E2	BLOCKCHAIN TECHNOLOGY	BIS703E4	ROBOTIC PROCESS AUTOMATION

BIS704Q1	INTRODUCTION TO ALGORITHMS	BIS704Q3	INTRODUCTION TO CLOUD COMPUTING
BIS704Q2	FUNDAMENTALS OF OPERATING SYSTEMS	BIS704Q4	INTRODUCTION TO ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Note: **IPCC:** Integrated Professional Core Course, **PCC:** Professional Core Course, **PCCL:** Professional Core Course Laboratory, **PEC:** Professional Elective Course, **OEC:** Open Elective Course, **PROJ:** Project Work

L – Lecture, **T** – Tutorial, **P**- Practical/ Drawing, **S** – Self-Study Component, **CIA:** Continuous Internal Assessment, **SEE:** Semester End Examination, **TD-** Teaching Department, **PSB:** Paper Setting Board, **ISE:** Information Science & Engineering

Integrated Professional Core Course (IPCC): Refers to the Professional Theory Core Course Integrated with the Practical of the same course. Credit for IPCC can be 04, and its Teaching– Learning hours (L: T: P) can be considered as (3: 0: 2) or (2: 2: 2). The theory part of the IPCC shall be evaluated both by CIA and SEE. The practical part shall be evaluated by only the CIA (no SEE). However, questions from the practical part of the IPCC shall be included in the SEE question paper.

Professional Elective Course (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students’ strengths for offering professional electives is 10. However, this condition shall not be applicable to cases where the admission to the program is less than 10.

Open Elective Courses (OEC): Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition, if any. Registration for open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor.

Selection of an Open Elective shall not be allowed if,

- i. The candidate has studied the same course during the previous semesters of the program.
- ii. The syllabus content of open electives is similar to that of the Departmental core courses or Professional Elective courses.
- iii. A similar course, under any category, is prescribed in the higher semesters of the program.
- iv. In case if any department is interested in offering courses from streams such as Law, Business (MBA), Medicine, Arts, Commerce, etc. need to get the necessary approval from the respective Board of Studies and the Academic Council.
- v. The minimum number of students for offering an Open Elective Course is 10. However, this condition shall not be applicable to classes where the admission to the program is less than 10.

Project Work Phase II (PW): The objective of the Project Work is to

- i. Encourage independent learning and the innovative attitude of the students
- ii. Develop interactive attitude, communication skills, Organization, Time Management, and Presentation Skills.
- iii. Impart Flexibility and Adaptability
- iv. Inspire Team working
- v. Expand Intellectual capacity, credibility, judgment, and intuition
- vi. Adhere to Punctuality, setting and meeting deadlines
- vii. Install responsibilities to oneself and others
- viii. Train students to present the topic of the Project work without any fear, face the audience confidently, enhance communication skills, and participate in group discussions to present and exchange ideas.

The evaluation of the Project Work Phase II shall contain both Continuous Internal Assessment (CIA) and Semester End Examination (SEE). The guidelines and the evaluation process will be defined by the Project Evaluation Committee (PEC) of the department and approved by the Board of Studies and the Academic Council of SCCEM.



B.E. in Information Science & Engineering

SCHEME OF TEACHING AND EVALUATION 2024

OUTCOME BASED EDUCATION(OBE) AND CHOICE BASED CREDIT SYSTEM (CBCS)

(2024 SCHEME: EFFECTIVE FROM THE ACADEMIC YEAR 2025 - 26)

VIII SEMESTER

Sl. No.	Course	Course Code	Course Title	Teaching Department (TD)	Question Paper Setting Board (PSB)	Teaching Hours/ Week				Examination				Credits
						Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIA Marks	SEE Marks	Total Marks	
						L	T	P	S					
1	PEC	BIS801Ex	PROFESSIONAL ELECTIVE COURSE - IV (12 WEEKS NPTEL) *	NPTEL		00	00	00	08	AS PER THE GUIDELINES OF NPTEL				03
2	OEC	BIS802Qx	OPEN ELECTIVE COURSE - III (12 WEEKS NPTEL) *	NPTEL		00	00	00	08	AS PER THE GUIDELINES OF NPTEL				03
3	INT	BIS803I	INTERNSHIP (14-20 WEEKS) RESEARCH INTERNSHIP / INDUSTRY INTERNSHIP/ RURAL INTERNSHIP	ISE	ISE	00	00	00	18	03	100	100	200	09
4	SEM	BIS804S	RESEARCH ORIENTED TECHNICAL SEMINAR	ISE	ISE	00	00	00	03	03	100	--	100	01
TOTAL											200	100	300	16

*To be published by the Board of Studies of ISE

Note: PEC: Professional Elective Course, OEC: Open Elective Course, INT: Internship, SEM: Technical Seminar

L – Lecture, T – Tutorial, P- Practical/ Drawing, S – Self-Study Component, CIA: Continuous Internal Assessment, SEE: Semester End Examination, TD- Teaching Department, PSB: Paper Setting Board, ISE: Information Science & Engineering

Professional Elective Course (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course.

1. The PEC-IV shall be completed by the student in the form of an online course, offered by NPTEL (STRICTLY) only.
2. The courses shall be identified and approved by the BoS. In the case of modification, the chairperson of the BoS shall notify the updated course(s) to the concerned appropriately.
3. The chosen course should not have been completed either in the MINORS or HONORS degree. If chosen and completed, then such course(s) shall automatically be cancelled and the candidates shall have to opt for other courses from the BoS published list of course(s).
4. The student shall complete the course at any time between the FIFTH semester and the SEVENTH semester.
5. The student has to provide the evidence for registering for the course, assignment submission, attending the examination, and the certificate provided by the course provider indicating the completion of the course by the candidate.
6. Only on submitting the valid documents, the student will be awarded the credits mentioned against the course(s), and the same shall be reflected in the EIGHTH semester grade card.
7. The EIGHTH semester marks card shall be provided to the student only on the completion of all the course(s) mentioned in the Eighth semester of the 2024-Scheme of Teaching and Evaluations.

Open Elective Courses (OEC): Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition, if any. Registration for open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor.

Selection of an Open Elective shall not be allowed if,

1. The candidate has studied the same course during the previous semesters of the program
2. The syllabus content of open electives is similar to that of the Departmental core courses or Professional Elective courses
3. The courses shall be identified and approved by the BoS. In the case of modification, the chairperson of the BoS shall notify the updated course(s) to the concerned appropriately
4. The chosen course should not have been completed either in the MINORS or HONORS degree. If chosen and completed, then such course(s) shall automatically be cancelled and the candidates shall have to opt for other courses from the BoS published list of course(s).
5. The student shall complete the course at any time between the FIFTH semester and the SEVENTH semester
6. The student has to provide the evidence for registering for the course, assignment submission, attending the examination, and the certificate provided by the course provider indicating the completion of the course by the candidate
7. Only on submitting the valid documents, the student will be awarded the credits mentioned against the course(s), and the same shall be reflected in the EIGHTH semester grade card
8. The EIGHTH semester marks card shall be provided to the student only on the completion of all the course(s) mentioned in the Eighth semester of the 2024-Scheme of Teaching and Evaluations.

Research Internship/ Industry Internship/ Rural Internship

- **Research Internship:** This is intended to offer the flavor of current research happening in the Research fields. It helps students to get familiar with the field and imparts the skills required for carrying out research.
- **Industry Internship:** An extended period of work experience undertaken by students to supplement their degree for professional development. It also helps them learn to overcome unexpected obstacles and successfully navigate the organizations, perspectives, and cultures. Dealing with contingencies helps the students recognize, appreciate, and adapt to the organizational realities by tempering their knowledge with practical constraints.
- **Rural Internship:** A long-term goal, as proposed under the AICTE rural internship programme, shall be counted as rural internship activity.
- The student may take up an Interdisciplinary Research Internship or an Industry Internship.
- The Faculty Mentor needs to monitor the student's internship progress and interact with them to guide them to the successful completion of the internship requirements.
- The students are permitted to carry out an internship anywhere in India or abroad. However, the institute will not bear any expenses incurred with respect to the internship.

Research Oriented Technical Seminar: In order to make the student aware of the technological and research applications in various domains of society, a comprehensive presentation needs to be provided with all the supporting evidence for the claims in the presentation.

- The objective of the Technical Seminar is to inculcate self-learning, present the seminar topic confidently, enhance communication skills, and engage in group discussion for the exchange of ideas.
- Each student, under the guidance of a Faculty member, shall choose a topic, preferably a recent topic in their interested specializations.
- The student has to
 - i. Carry out a detailed Literature survey and systematically organize the content.
 - ii. Prepare the report as per the format, without cut-and-paste activities.
 - iii. Use tools for writing equations, drawings, etc., and gain proficiency in the tools used.
 - iv. Present the topics effectively through appropriate digital media.
 - v. Answer the queries posed and get involved in healthy debates/discussions
 - vi. Submit a report in an error-free and professional way
 - vii. Present the findings of the seminar in the reputed Conferences/Journals for possible publications (desirable).
- The evaluation procedure for the Research oriented Technical Seminar will be as provided by the Board of Studies and approved by the Academic Council of SCEM.