



ANNAPOORANA ENGINEERING COLLEGE

(An Autonomous Institution)

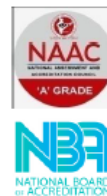
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NH-47, Sankari Main Road, Periyaseeragapadi, Salem-636308, Tamil Nadu.

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

5th Board of Studies Meeting

Venue: Board Room

Date & Time: 03.07.2026 & 11.00a.m



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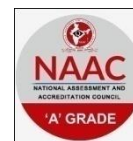
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INDEX

S. No.	Particulars	Page No
1	Circular – BoS	1
2	Attendance - BoS	2
3	Geo-Tagged Photographs	3
4	Minutes of the Meeting	4
5	Regulation 2026 - Curriculum (Semester I to VIII)	10
6	Regulation 2022 - Curriculum (Semester I to VIII)	15
7	Regulation 2022 Syllabus – Semester VII & VIII	35



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AEC/AI&DS/2026-27/BOS/AD05

DATE: 25.06.26

CIRCULAR

This is to inform all the members of the Board of Studies (BoS) that the 5th Board of Studies Meeting of the Department of Artificial Intelligence and Data Science is scheduled as per the details given below:

Date: **Friday, 03rd July 2026**

Time: **11:00 A.M.**

Venue: **Board Room, Annapoorana Engineering College.**

The members are kindly requested to make it convenient to attend the meeting and contribute their valuable suggestions.


Dr. R. Punidha
HOD/AI&DS


Dr. A. Anbuchezeian
Principal

PRINCIPAL
Annapoorana Engineering College,
Autonomous
NH-47, Sankari Main Road,
Periyaseeragapadi, Salem-636 308

Copy to:

1. Director Academics
2. Director Administration
3. All HoDs
4. All Faculty members
5. Main Notice Board
6. File



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Minutes of Board of Studies Meeting on 03.07.2026

Minutes of the meeting of Board of Studies, Department of Artificial Intelligence & Data Science, held at 11.00 am on 03rd July 2026(Friday) at Board Room.

Members Present

S.No	Member	Position	Category	Signature
1.	Dr.R.Punidha	Professor / HOD	Chairman	
2.	Dr.D.Indumathi	Associate Professor, Department of Computer Science Engineering, PSG College of Technology, Coimbatore	University Nominee	 Attended online
3.	Dr.G.Nagarajan	Professor, Department of Computer Science & Engineering, Sathyabama Institute of Science and Technology, Chennai	Academic Experts from outside the Parent University	
	Dr.V.Sowmya	Associate Professor, Amrita School of Artificial Intelligence, Amrita Vishwa Vidyapeetham, Coimbatore		
4.	Mr.S.A.Manikandan	Founder, Supporticon Strategies Private Ltd. Salem.	Industry Representative	
5.	Mrs.K.Priyanka	Associate Professor	Faculty Members	
6.	Mrs.G.Maria Lavanya Sangeetha	Assistant Professor		
7.	Mr.C.Sukumar	Assistant Professor		
8.	Mr.K.Venkatesh	Assistant Professor		
9.	Mrs.P.Divya priya	Assistant Professor		
10.	Mrs.J.Indumathi	Assistant Professor		
11.	Mrs.M.Ammuindrapriya	Assistant Professor		
12.	Mrs.C.M.Niranjana	Assistant Professor		
13.	Mr.R.Sadaiyappan	Assistant Professor		

Principal

Dr.A.Anbuchezeian

PRINCIPAL

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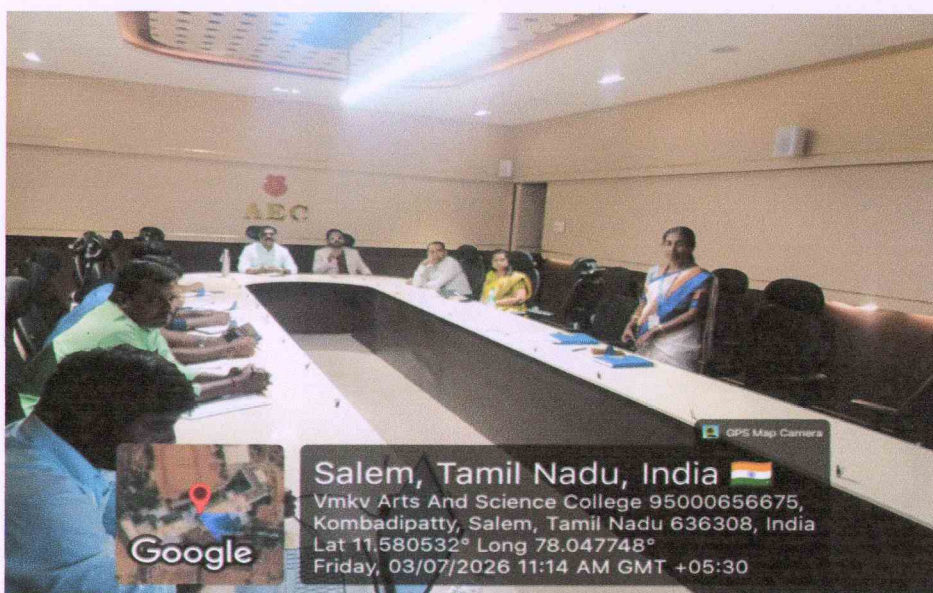
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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Venue: Board Room

Date & Time: 03.07.2026 & 11.00 a.m.





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MINUTES OF BOARD OF STUDIES MEETING

Date : Friday, 03rd July' 2026

Time : 11:00 AM

Venue : Board Room

The Chairperson welcomed the University Nominee, Subject Experts, Industry Expert, Alumni Representative, and internal faculty members to the Fifth Board of Studies Meeting of the Department of Artificial Intelligence and Data Science. After confirming the quorum, the Chairperson commenced the proceedings.

Agenda

1. Overview of Regulation 2026.
2. Categorization of Courses under Regulation 2026.
3. Assessment and Examination Process.
4. Confirmation of the Minutes of the Fourth Board of Studies Meeting.
5. Presentation and Approval of the Action Taken Report on the Fourth Board of Studies Meeting.
6. Discussion and Approval of the Curriculum Structure for I–VIII Semesters under Regulation 2026.
7. Discussion and Approval of the Syllabi for I & II Semester AI&DS Courses.
8. Any Other Matter with the Permission of the Chair.
9. Conclusion

Agenda 1: Overview of Regulation 2026

The Chairperson presented the salient features of Regulation 2026, highlighting the revised curriculum framework, outcome-based education, multidisciplinary learning, industry integration, experiential learning, internship components, and enhanced focus on emerging technologies.

The members appreciated the efforts taken in designing a curriculum aligned with AICTE guidelines and industry requirements.

Resolution:

The Board approved the overall framework of Regulation 2026.





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Agenda 2: Categorization of Courses under Regulation 2026

The proposed categorization of courses into Basic Sciences, Engineering Sciences, Humanities and Social Sciences, Professional Core, Professional Electives, Open Electives, Skill Development Courses, Employability Enhancement Courses, Mandatory Courses, Internship, and Project Work was presented.

The members reviewed the category-wise credit distribution and found it to be balanced and in accordance with institutional and regulatory guidelines.

Resolution:

The Board approved the categorization of courses under Regulation 2026.

Agenda 3: Assessment and Examination Process

The revised assessment and examination process, including Continuous Internal Assessment (CIA), End Semester Examination (ESE), laboratory evaluation, project assessment, and eligibility requirements, was presented.

The members discussed the evaluation methodology and appreciated the emphasis on continuous assessment and outcome-based evaluation.

Resolution:

The Board approved the assessment and examination process for Regulation 2026.

Agenda 4: Confirmation of the Minutes of the Fourth Board of Studies Meeting

The minutes of the Fourth Board of Studies Meeting held on 29 November 2025 were placed before the Board for confirmation. The Board noted that the syllabi for the VII and VIII Semesters under Regulation 2022 had already been presented, deliberated upon, and approved during the Fourth Board of Studies Meeting.

The members reviewed the minutes and confirmed that they accurately reflected the deliberations, recommendations, and resolutions of the previous meeting.

Resolution:

The Board unanimously confirmed the minutes of the Fourth Board of Studies Meeting held on 29 November 2025.





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Agenda 5: Presentation and Approval of the Action Taken Report on the Fourth Board of Studies Meeting

The Chairperson presented the Action Taken Report on the recommendations made during the Fourth Board of Studies Meeting. The detailed Action Taken Report is enclosed as Annexure-I. The members reviewed the report and expressed satisfaction with the implementation of the recommendations.

Resolution:

The Board approved the Action Taken Report (Annexure-I) of the Fourth Board of Studies Meeting.

Agenda 6: Discussion and Approval of the Curriculum Structure for I–VIII Semesters under Regulation 2026

The Chairperson presented the complete curriculum structure for Semesters I to VIII. The Board deliberated on the semester-wise course distribution, credit allocation, laboratory courses, electives, internships, and project components.

The following recommendations were made:

- Problem Solving and Python Programming in Semester I and C Programming in Semester II were approved as GUVI–HCL Industry Integrated Courses and as common courses for all departments.
- Digital Principles and System Design was approved for inclusion in Semester II.
- Design Thinking was approved for Semester IV to enhance students' innovation and problem-solving skills.
- The Board recommended encouraging students to pursue global industry certifications.
- The Board recommended introducing Quantum Computing in Semester V or VI.
- The Board recommended including at least one Project-Based Learning (PBL) course in the curriculum.
- The Board recommended establishing a Cloud Computing Laboratory to support AI application development.
- The Board emphasized encouraging students to undertake mini projects from the second year onwards to strengthen practical knowledge and industry-oriented learning.

Resolution:

The Board approved the Curriculum Structure for Semesters I–VIII under Regulation 2026. The Board also recommended the incorporation/implementation of the above suggestions, wherever





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applicable, as part of the continuous improvement of the curriculum.

Agenda 7: Discussion and Approval of the Syllabi for I and II Semester of the AI&DS Courses

The Chairperson presented the detailed syllabi for the Semester I and Semester II courses of the AI&DS programme, developed in accordance with the approved Regulation 2026 curriculum structure.

The members reviewed the Course Objectives, Course Outcomes, unit-wise contents, textbooks, reference books, laboratory exercises, assessment pattern, and CO-PO-PSO mapping. The members also reviewed the syllabi of the common courses and GUVI-HCL Industry Integrated Courses proposed for the respective semesters. The suggestions offered by the members were duly incorporated.

Resolution:

The Board reviewed and approved the Semester I syllabi and the revised Semester II syllabi for implementation under Regulation 2026. The approved Semester I syllabi include the common courses and GUVI-HCL Industry Integrated Courses, wherever applicable.

Agenda 8: Any Other Matter with the Permission of the Chair

The members appreciated the efforts of the department in developing an industry-oriented and future-ready curriculum. They suggested periodically reviewing the curriculum to incorporate emerging technologies and strengthen industry collaboration.

Conclusion

The Chairperson thanked all the BoS members for their valuable inputs, expert guidance, and constructive suggestions. The meeting concluded with a consensus to implement the approved recommendations for continuous improvement of the Artificial Intelligence and Data Science programme.





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*Attended through
online Mode*

Dr.D.Indumathi
Anna University Nominee

Dr. G.Nagarajan
Academic Expert

Dr.V.Sowmya
Academic Expert

Mr.S.A.Manikandan
Industry Representative

Dr.R.Punidha
Chairman BOS

Dr.A. Anbuchejian
Principal

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ANNEXURE – 1

Action Taken Report on the Recommendations of the Fourth Board of Studies Meeting

Recommendation of the BoS	Action Taken
Introduce Industry-integrated courses in the curriculum.	Industry-integrated courses have been incorporated into the curriculum. Python Programming (Semester I) and C Programming (Semester II) are offered in collaboration with GUVI-HCL .
Introduce Ethics in Artificial Intelligence as a mandatory course.	Ethics in Artificial Intelligence has been included as a mandatory course in the Regulation 2026 curriculum.
Include emerging courses such as Predictive Analytics, Prompt Engineering, Generative AI, and Quantum Computing .	Emerging technology subjects have been incorporated into the Regulation 2026 curriculum. Quantum Computing has been proposed for Semester V/VI, and other emerging topics have been accommodated in relevant courses/electives.
Strengthen core foundations by including Digital Principles & Computer Organization, IoT, and Image Processing .	Digital Principles and System Design has been included as a core course. IoT and Image Processing have been incorporated into the curriculum as recommended.
Introduce Design Thinking and Problem Solving in earlier semester.	Based on further BoS deliberations, Design Thinking has been included in Semester IV to provide students with better foundational knowledge before undertaking design-oriented learning.
Introduce an Intellectual Property Rights (IPR) course.	Intellectual Property Rights (IPR) has been included in the Regulation 2026 curriculum.





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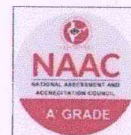
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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

REGULATION 2026 CURRICULUM – SEMESTER: I - VIII



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CURRICULUM I – VIII FOR REGULATION 2026

SEMESTER - I

S. NO.	COURSE CODE	COURSE NAME	COURSE TYPE	CATEGORY	PERIODS PER WEEK		CREDITS
					L-T-P	TCP	
1	26IP001	Induction Programme		-	-	-	0
2	26HS101	English Essentials - I	LIT	HSMC	2-0-2	4	3
3	26MA102	Calculus and Functions of several Variables	T	BSC	3-0-0	3	3
4	26PH101	Applied Physics - I	T	BSC	3-0-0	3	3
5	26CY101	Applied Chemistry	T	BSC	3-0-0	3	3
6	26GE101	Problem Solving and Python Programming	LIT	ESC	3-0-2	5	4
7	26GE103	Essentials of Computing	T	ESC	3-0-0	3	3
8	26HS102	Heritage of Tamils	T	HSMC	1-0-0	1	1
9	26PC111	Physics and Chemistry Laboratory	L	BSC	0-0-4	4	2
Total Credits					18-0-8	26	22

SEMESTER - II

S. NO.	COURSE CODE	COURSE NAME	COURSE TYPE	CATEGORY	PERIODS PER WEEK		CREDITS
					L-T-P	TCP	
1	26HS201	English Essentials - II	LIT	HSMC	2-0-2	4	3
2	26MA202	Differential Equations and Vector Analysis	T	BSC	3-0-0	3	3
3	26PH203	Physics for Information Science	T	BSC	3-0-0	3	3
4	26CY201	Climate Change and Sustainability	T	BSC	2-0-0	2	2
5	26GE201	C Programming	LIT	ESC	3-0-2	5	4
6	26GE202	Basic Electrical and Electronics Engineering	T	ESC	3-0-0	3	3
7	26GE204	Digital Principles and System Design	T	ESC	3-0-0	3	3
8	26HS202	Tamils and Technology	T	HSMC	1-0-0	1	1
9	26GE111	Maker Space	L	ESC	0-0-4	4	2
Total Credits					18-0-8	28	24





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SEMESTER – III

S. NO.	COURSE CODE	COURSE NAME	COURSE TYPE	CATEGORY	PERIODS PER WEEK		CREDITS
					L-T-P	TCP	
1	26MA301	Discrete Mathematics	T	BSC	3-0-0	3	3
2	26AD301	Computer Networks	T	PCC	3-0-0	3	3
3	26AD302	Artificial Intelligence	T	PCC	3-0-0	3	3
4	26AD303	Operating Systems	LIT	PCC	3-0-2	5	4
5	26AD304	Exploratory Data Analysis	LIT	PCC	3-0-2	5	4
6		Mandatory Course	T	MC	1-0-0	2	2
7		Skill Development Course-I	L	SDC	0-0-4	4	2
8		Artificial Intelligence Lab	L	PCC	0-0-4	4	2
Total Credits							23

SEMESTER - IV

S. NO.	COURSE CODE	COURSE NAME	COURSE TYPE	CATEGORY	PERIODS PER WEEK		CREDITS
					L-T-P	TCP	
1	26MA401	Probability & Statistics	T	BSC	3-0-0	3	3
2	26AD401	Data Base Management Systems	LIT	PCC	3-0-2	5	4
3	26AD402	Machine Learning	T	PCC	3-0-0	3	3
4	26AD403	Big Data Analytics	T	PCC	3-0-0	3	3
5	26AD404	Optimization Techniques	T	ESC	3-0-0	3	3
6	26AD405	Prompt Engineering	T	ETC	1-0-0	1	3
7	26AD407	Machine Learning Lab	L	LAB	0-0-4	4	2
8	26AD408	Skill Development Course	L	LAB	0-0-4	4	2
Total Credits							23





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SEMESTER V

S. NO.	COURSE CODE	COURSE NAME	COURSE TYPE	CATEGORY	PERIODS PER WEEK		CREDITS
					L-T-P	TCP	
1	26ADV01	Professional Elective-I	T	PEC	3-0-0	3	3
2	26AD501	Ethics in Artificial Intelligence	T	PCC	3-0-0	3	3
3	26AD502	Java Programming	T	PCC	3-0-0	3	3
4	26AD503	Deep Learning	LIT	PCC	3-0-2	5	4
5	26AD504	Data and Information Security	LIT	PCC	3-0-2	5	4
6	26AD505	Java Programming Lab	L	PCC	0-0-4	4	2
7		Open Elective Course - I	T	OEC	3-0-0	3	3
8		Mandatory Course	T	MC	3-0-0	3	3
Total Credits							25

SEMESTER - VI

S. NO.	COURSE CODE	COURSE NAME	COURSE TYPE	CATEGORY	PERIODS PER WEEK		CREDITS
					L-T-P	TCP	
1	26ADV	Professional Elective - II	T	PEC	3-0-0	3	3
2	26ADV	Professional Elective - III	T	PEC	3-0-0	3	3
3	26AD601	Artificial Intelligence of Things	LIT	PCC	3-0-2	5	4
4	26AD602	Cloud Computing	T	PCC	3-0-2	3	3
5		Open Elective Course - II	T	OEC	3-0-0	3	3
6	26AD603	Cloud Computing Lab	L	LAB	0-0-4	4	2
7		Mandatory Course	T	MC	3-0-0	3	3
8		Skill Development Course-II	L	SDC	0-0-4	4	2
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SEMESTER - VII

S. NO.	COURSE CODE	COURSE NAME	COURSE TYPE	CATEGORY	PERIODS PER WEEK		CREDITS
					L-T-P	TCP	
1	26AD701	Data Mining	T	PCC	3-0-2	5	4
2		Professional Elective - IV	T	PEC	3-0-0	3	3
3		Professional Elective - IV	T	PEC	3-0-0	3	3
4		Professional Elective - VI	T	PEC	3-0-0	3	3
5		Open Elective - III	T	OEC	3-0-0	3	3
6		Quantum Computing	T	ETC	3-0-0	3	3
7		Generative AI Lab	L	LAB	0-0-4	4	2
8		Industry Oriented Course	L	IOC	0-0-4	4	1
Total Credits							22

SEMESTER - VIII

S. NO.	COURSE CODE	COURSE NAME	COURSE TYPE	CATEGORY	PERIODS PER WEEK		CREDITS
					L-T-P	TCP	
1		Project Work		SDC			8
Total Credits							8

TOTAL CREDITS: 170





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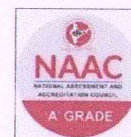
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B.TECH ARTIFICIAL INTELLIGENCE AND DATA SCIENCE REGULATION - 2022

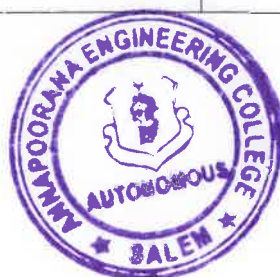
CHOICE BASED CREDIT SYSTEM

CURRICULUM FOR SEMESTER I TO VIII

Applicable to the students admitted from the Academic year 2023-2024 onwards

SEMESTER-I

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
1.	22IP001	Induction Programme	-	0	0	0	0	0
THEORY								
2.	22HS101	Professional English - I	HSMC	3	0	0	3	3
3.	22MA101	Matrices and Calculus	BSC	3	0	0	3	3
4.	22PH101	Engineering Physics	BSC	3	0	0	3	3
5.	22CY101	Engineering Chemistry	BSC	3	0	0	3	3
6.	22GE101	Problem Solving and Python Programming	ESC	3	0	0	3	3
7.	22GE102	Engineering Graphics	ESC	2	0	2	4	3
8.	22GE103	Heritage of Tamil	HSMC	1	0	0	1	1
PRACTICALS								
9.	22GE104	Problem Solving and Python Programming Laboratory	ESC	0	0	4	4	2
10.	22PC101	Physics and Chemistry Laboratory	BSC	0	0	4	4	2
11.	22GE105	English Laboratory	EEC	0	0	2	2	1
TOTAL				18	0	12	30	24



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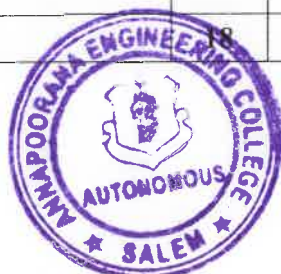
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SEMESTER-II

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
THEORY								
1.	22HS201	Professional English-II	HSMC	3	0	0	3	3
2.	22MA201	Vectors and Complex Function	BSC	3	0	0	3	3
3.	22PH203	Physics for Information Science	BSC	3	0	0	3	3
4.	22CY201	Environmental Science and Sustainability	BSC	2	0	0	2	2
5.	22GE201	Basic Electrical and Electronics Engineering	ESC	3	0	0	3	3
6.	22CS201	Programming in C	PC	3	0	0	3	3
7.	22GE202	Tamils and Technology	HSMC	1	0	0	1	1
PRACTICALS								
8.	22GE203	Basic Electrical and Electronics Engineering Laboratory	ESC	0	0	4	4	2
9.	22CS202	Programming in C Laboratory	PC	0	0	4	4	2
10.	22GE204	Engineering Practice Laboratory	ESC	0	0	4	4	2
11.	22GE205	Communication Laboratory/ Foreign Language	EEC	0	0	4	4	2
TOTAL				18	0	16	34	26



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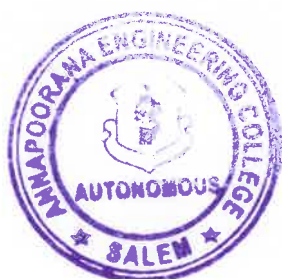
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SEMESTER-III

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
THEORY								
1.	22MA303	Discrete Mathematics	BSC	3	0	0	3	3
2.	22EC307	Digital Principles and Computer Organization	PC	3	0	2	5	4
3.	22AD301	Data Base Design and Management	PC	3	0	0	3	3
4.	22AD302	Design and Analysis of Algorithms	PC	3	0	0	3	3
5.	22AD303	Data Exploration and Visualization	PC	3	0	2	5	4
6.	22AD304	Artificial Intelligence	PC	3	0	0	3	3
PRACTICALS								
7.	22AD305	Data Base Design and Management Laboratory	PC	0	0	4	3	2
8.	22AD306	Artificial Intelligence Laboratory	PC	0	0	4	3	2
9.		Physical and Mental Health using Yoga	NCMC	0	0	2	2	0
TOTAL				18	0	14	30	24



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SEMESTER-IV

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
THEORY								
1.	22MA401	Probability and Statistics	BSC	3	0	0	3	3
2.	22CS402	Operating Systems	PC	3	0	0	3	3
3.	22AD402	Machine Learning	PC	3	0	0	3	3
4.	22AD403	Fundamentals of Data Science and Analytics	PC	3	0	0	3	3
5.	22AD404	Computer Communication Networks	PC	3	0	2	5	4
PRACTICALS								
6.	22AD405	Data Science and Analytics Laboratory	PC	0	0	4	4	2
7.	22AD406	Machine Learning Laboratory	PC	0	0	4	4	2
8.	22CS404	Operating System Laboratory	PC	0	0	4	4	2
9.		Entrepreneurial Skill Development	NCCM	2	0	0	2	0
TOTAL				17	0	14	30	22



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SEMESTER-V

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
THEORY								
1.	22AD501	Deep Learning	PC	3	0	2	5	4
2.	22AD502	Big Data Analytics	PC	2	0	2	4	3
3.	22AD503	Object Oriented Programming using Java	PC	3	0	0	3	3
4.	22EC408	Embedded Systems with IOT	PC	3	0	2	5	4
5.		Professional Elective I	PE	2	0	2	4	3
6.		Professional Elective II	PE	2	0	2	4	3
PRACTICALS								
7.	22AD504	Object Oriented Programming using Java Laboratory	PC	0	0	4	4	2
8.		Skill Development	NCMC	2	0	0	2	0
TOTAL				-	-	-	-	22



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SEMESTER-VI

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
THEORY								
1.	22CS502	Mobile App Development	PC	3	0	0	3	3
2.		Open Elective- I	OE	3	0	0	3	3
3.		Open Elective- II	OE	3	0	0	3	3
4.		Professional Elective III	PE	2	0	2	4	3
5.		Professional Elective IV	PE	2	0	2	4	3
6.		Professional Elective V	PE	2	0	2	4	3
PRACTICALS								
7.	22CS505	Mobile App Development Laboratory	PC	0	0	4	4	2
TOTAL				-	-	-	-	20



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SEMESTER-VII

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
THEORY								
1.		Human Values and Ethics	HSMC	3	0	0	3	3
2.		Elective - Management	HSMC	3	0	0	3	3
3.		Professional Elective – VI	PE	2	0	2	4	3
4.		Open Elective – III	OE	3	0	0	3	3
5.		Open Elective – IV	OE	3	0	0	3	3
PRACTICALS								
6.		Summer Internship	EEC	0	0	0	0	2
TOTAL				14	0	0	16	17

SEMESTER-VIII

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
PRACTICALS								
1.	22AD801	Project Work / Internship	EEC	0	0	20	20	10
TOTAL				0	0	20	20	10



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HUMANITIES AND SOCIAL SCIENCES INCLUDING MANAGEMENT (HSMC)

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
1.	22HS101	Professional English-I	HSMC	3	0	0	3	3
2.	22GE103	Heritage of Tamil	HSMC	1	0	0	1	1
3.	22HS201	Professional English-II	HSMC	3	0	0	3	3
4.	22GE202	Tamils and Technology	HSMC	1	0	0	1	1
5.	22GE501	Professional Ethics in Engineering	HSMC	3	0	0	3	3

EMPLOYMENT ENHANCEMENT COURSES (EEC)

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
1.	22GE105	English Laboratory	EEC	0	0	2	2	1
2.	22GE205	Communication Laboratory/ Foreign Language	EEC	0	0	4	4	2
3.	22CS605	Summer Internship	EEC	0	0	0	0	2
4.	22CS702	Project Phase – I	EEC	0	0	8	8	4
5.	22CS802	Project Phase – II	EEC	0	0	12	12	6

NON CREDITABLE MANDATORY COURSE (NCMC)

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
1.	22CSN01	Physical and Mental Health using Yoga	NCMC	1	0	1	2	0
2.	22CSN02	Entrepreneurial Skill Development	NCMC	2	0	0	2	0
3.	22CSN03	Essence of Indian Knowledge Tradition	NCMC	2	0	0	2	0
4.	22CSN04	Introduction to Women and Gender Studies	NCMC	2	0	0	2	0



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BASIC SCIENCES (BS)

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
1.	22MA101	Matrices And Calculus	BSC	3	0	0	3	3
2.	22PH101	Engineering Physics	BSC	3	0	0	3	3
3.	22CY101	Engineering Chemistry	BSC	3	0	0	3	3
4.	22PC101	Physics and Chemistry Laboratory	BSC	0	0	4	4	2
5.	22MA201	Vectors and Complex Function	BSC	3	0	0	3	3
6.	22PH203	Physics for Information Science	BSC	3	0	0	3	3
7.	22CY201	Environmental Science and Sustainability	BSC	2	0	0	2	2
8.	22MA302	Statistics and Numerical Methods	BSC	3	0	0	3	3
9.	22MA402	Discrete Mathematics	BSC	3	0	0	3	3

ENGINEERING SCIENCES (ESC)

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
1.	22GE101	Problem Solving and Python Programming	ESC	3	0	0	3	3
2.	22GE102	Engineering Graphics	ESC	3	0	0	3	3
3.	22GE104	Problem Solving and Python Programming Laboratory	ESC	0	0	4	4	2
4.	22GE201	Basic Electrical and Electronics Engineering	ESC	3	0	0	3	3
5.	22GE203	Basic Electrical and Electronics Engineering Laboratory	ESC	0	0	4	4	2
6.	22GE204	Engineering Practice Laboratory	ESC	0	0	4	4	2
7.	22EC307	Digital Principles and Computer Organization	ESC	3	0	2	5	4
8.	22EC408	Embedded Systems with IoT	ESC	3	0	2	5	4



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PROFESSIONAL CORE (PC)

S.No	Course Code	Course Title	Category	L	T	P	Contact Periods	C
1.	22CS201	Programming In C	PC	3	0	0	3	3
2.	22CS202	Programming In C Lab	PC	0	0	4	4	2
3.	22AD301	Database Design and Management	PC	3	0	0	3	3
4.	22EC307	Digital Principles and Computer Organization	PC	3	0	2	5	4
5.	22AD302	Design and Analysis of Algorithms	PC	3	0	0	3	3
6.	22AD303	Data Exploration and Visualization	PC	3	0	2	5	4
7.	22AD304	Artificial Intelligence	PC	3	0	0	3	3
8.	22AD305	Data Base Design and Management Laboratory	PC	0	0	4	3	2
9.	22AD306	Artificial Intelligence Laboratory	PC	0	0	4	3	2
10.	22CS402	Operating Systems	PC	3	0	0	3	3
11.	22AD402	Machine Learning	PC	3	0	0	3	3
12.	22AD403	Fundamentals of Data Science and Analytics	PC	3	0	0	3	3
13.	22AD404	Computer Communication Networks	PC	3	0	2	5	4
14.	22AD405	Data Science and Analytics Laboratory	PC	0	0	4	4	2
15.	22AD406	Machine Learning Laboratory	PC	0	0	4	4	2
16.	22CS404	Operating System Laboratory	PC	0	0	4	4	2
17.	22AD501	Deep Learning	PC	3	0	2	5	4
18.	22AD502	Big Data Analytics	PC	2	0	2	4	3
19.	22AD503	Object Oriented Programming using Java	PC	3	0	0	3	3



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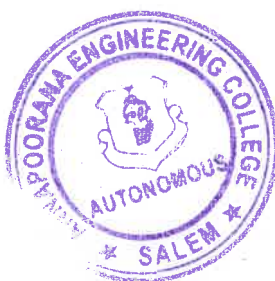
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20.	22EC408	Embedded Systems with IOT	PC	3	0	2	5	4
21.	22AD504	Object Oriented Programming using Java Laboratory	PC	0	0	4	4	2
22.	22CS502	Mobile App Development	PC	3	0	0	3	3
23.	22CS505	Mobile App Development Laboratory	PC	0	0	4	4	2



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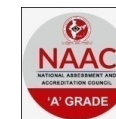
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PROFESSIONAL ELECTIVE COURSES: VERTICALS

Vertical I Data Science	Vertical II Full Stack Development	Vertical III Cloud Computing	Vertical IV Cyber Security	Vertical V Creative Media	Vertical VI Emerging Technologies	Vertical VII Artificial Intelligence and Machine Learning
Knowledge Engineering	Full Stack Software Development	Cloud Computing	Ethical Hacking	Augmented Reality/ Virtual Reality	Natural Language Processing	Bio-Inspired Optimization Techniques
Recommender Systems	App Development	Virtualization	Digital and Mobile Forensics	Multimedia and Animation	Robotic Process Automation	Reinforcement Learning
Exploratory Data Analytics	Cloud Services management	Cloud Architectures	Social Network Security	Video Creation and Editing	Intelligent Automation Systems	Health Care Analytics
Text and Speech Analysis	UI and UX Design	Cloud Application Development	Modern Cryptography	3D Modeling and Game Design	Neural Networks and Deep Learning	Generative AI
Business Analytics	Software Testing and Automation	Storage Technologies	Engineering Secure Software Systems	Digital Marketing	Quantum Computing	Optimization Techniques
Image and Video Analytics	Web Development 5.0	Software Defined Network	Web Application Security	Multimedia Data Compression and Storage	Cryptocurrency and Blockchain Technologies	Game Theory
Computer Vision	DevOps	Stream Processing	Data and Information security	Game Development	Fog and Edge Computing	Cognitive Science
Data Warehousing and Data Mining	Agile Methodologies	Security and Privacy in Cloud	Cyber Security	Visual Effects	3D Printing and Design	Ethics and AI



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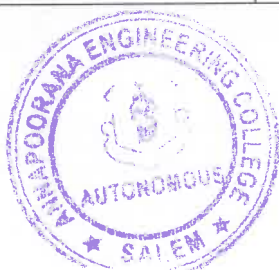
PROFESSIONAL ELECTIVE COURSES

PROFESSIONAL ELECTIVE-I: DATA SCIENCE

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	C
1.	22ADV01	Knowledge Engineering	PE	2	0	2	4	3
2.	22ADV02	Recommender Systems	PE	2	0	2	4	3
3.	22ADV03	Exploratory Data Analysis	PE	2	0	2	4	3
4.	22ADV04	Text and Speech Analysis	PE	2	0	2	4	3
5.	22ADV05	Business Analytics	PE	2	0	2	4	3
6.	22ADV06	Image and Video Analytics	PE	2	0	2	4	3
7.	22ADV07	Computer Vision	PE	2	0	2	4	3
8.	22ADV08	Data Warehousing and Data Mining	PE	2	0	2	4	3

PROFESSIONAL ELECTIVE-II: FULLSTACK DEVELOPMENT

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	C
1.	22ADV09	Full Stack Software Development	PE	2	0	2	4	3
2.	22ADV10	App Development	PE	2	0	2	4	3
3.	22ADV11	Cloud Services Management	PE	2	0	2	4	3
4.	22ADV12	UI and UX Design	PE	2	0	2	4	3
5.	22ADV13	Software Testing and Automation	PE	2	0	2	4	3
6.	22ADV14	Web Development 5.0	PE	2	0	2	4	3
7.	22ADV15	DevOps	PE	2	0	2	4	3
8.	22ADV16	Agile Methodologies	PE	2	0	2	4	3



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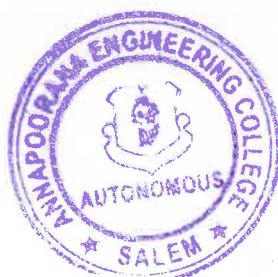


PROFESSIONAL ELECTIVE-III: CLOUD COMPUTING

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	C
1.	22ADV17	Cloud Computing	PE	2	0	2	4	3
2.	22ADV18	Virtualization	PE	2	0	2	4	3
3.	22ADV19	Cloud Architectures	PE	2	0	2	4	3
4.	22ADV20	Cloud Application Development	PE	2	0	2	4	3
5.	22ADV21	Storage Technologies	PE	2	0	2	4	3
6.	22ADV22	Software Defined Networks	PE	2	0	2	4	3
7.	22ADV23	Stream Processing	PE	2	0	2	4	3
8.	22ADV24	Security and Privacy in Cloud	PE	2	0	2	4	3

PROFESSIONAL ELECTIVE- IV : CYBER SECURITY

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	C
1.	22ADV25	Ethical Hacking	PE	2	0	2	4	3
2.	22ADV26	Digital and Mobile Forensics	PE	2	0	2	4	3
3.	22ADV27	Social Network Security	PE	2	0	2	4	3
4.	22ADV28	Modern Cryptography	PE	2	0	2	4	3
5.	22ADV29	Engineering Secure Software Systems	PE	2	0	2	4	3
6.	22ADV30	Web Application Security	PE	2	0	2	4	3
7.	22ADV31	Data and Information Security	PE	2	0	2	4	3
8.	22ADV32	Cyber Security	PE	2	0	2	4	3



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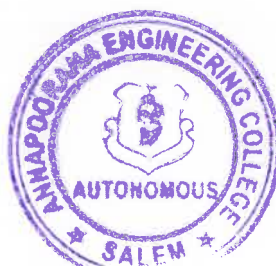


PROFESSIONAL ELECTIVE- V : CREATIVE MEDIA

SL.NO	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	C
1.	22ADV33	Augmented Reality/ Virtual Reality	PE	2	0	2	4	3
2.	22ADV34	Multimedia and Animation	PE	2	0	2	4	3
3.	22ADV35	Video Creation and Editing	PE	2	0	2	4	3
4.	22ADV36	3D Modeling and Game Design	PE	2	0	2	4	3
5.	22ADV37	Digital Marketing	PE	2	0	2	4	3
6.	22ADV38	Multimedia Data Compression and Storage	PE	2	0	2	4	3
7.	22ADV39	Game Development	PE	2	0	2	4	3
8.	22ADV40	Visual Effects	PE	2	0	2	4	3

PROFESSIONAL ELECTIVE- VI : EMERGING TECHNOLOGIES

SL.NO	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	C
1.	22ADV41	Natural Language Processing	PE	2	0	2	4	3
2.	22ADV42	Robotic Process Automation	PE	2	0	2	4	3
3.	22ADV43	Intelligent Automation Systems	PE	2	0	2	4	3
4.	22ADV44	Neural Networks and Deep Learning	PE	2	0	2	4	3
5.	22ADV45	Quantum Computing	PE	2	0	2	4	3
6.	22ADV46	Cryptocurrency and Blockchain Technologies	PE	2	0	2	4	3
7.	22ADV47	Fog and Edge Computing	PE	2	0	2	4	3
8.	22ADV48	3D Printing and Design	PE	2	0	2	4	3



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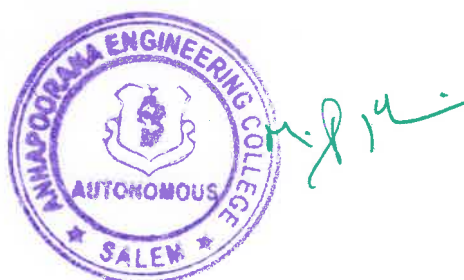


PROFESSIONAL ELECTIVE- VII: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	C
1.	22ADV49	Bio-Inspired Optimization Techniques	PE	2	0	2	4	3
2.	22ADV50	Soft Computing	PE	2	0	2	4	3
3.	22ADV51	Health Care Analytics	PE	2	0	2	4	3
4.	22ADV752	Generative AI	PE	2	0	2	4	3
5.	22ADV53	Optimization Techniques	PE	2	0	2	4	3
6.	22ADV54	Game Theory	PE	2	0	2	4	3
7.	22ADV55	Cognitive Science	PE	2	0	2	4	3
8.	22ADV56	Ethics and AI	PE	2	0	2	4	3

MANAGEMENT ELECTIVES

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	C
1.	22GE	Principles of Management	HSMC	3	0	0	3	3
2.	22GE	Total Quality Management	HSMC	3	0	0	3	3
3.	22GE	Engineering Economics and Financial Accounting	HSMC	3	0	0	3	3
4.	22GE	Human Resource Management	HSMC	3	0	0	3	3
5.	22GE	Knowledge Management	HSMC	3	0	0	3	3
6.	22GE	Industrial Management	HSMC	3	0	0	3	3





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CHOICE BASED CREDIT SYSTEM (CBCS)

I TO VIII SEMESTER CURRICULUM SUMMARY

S. No.	SUBJECT AREA	CREDITS AS PER SEMESTER								TOTAL CREDITS	PERCENTAGE
		I	II	III	IV	V	VI	VII	VIII		
1.	HSMC	4	4					6		14	8.4%
2.	BSC	11	6	3	3					23	13.9%
3.	ESC	8	9							17	10.4%
4.	PC		5	21	19	16	5			66	40%
5.	PE					6	9	3		18	11%
6.	OE						6	6		12	7.2%
7.	EEC	1	2			0		2	10	15	9.1%
8.	NC/MC					√	√				
	Total	24	26	24	22	22	20	17	10	165	100%
	Non Credit / Mandatory	-	-	-	-	-	-	-	-	-	-



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OPEN ELECTIVES

S.NO	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	C
1	22OEE01	Introduction to Control Systems	OE	3	0	0	3	3
2	22OEE02	Renewable Energy Systems	OE	3	0	0	3	3
3	22OEE03	Energy Conservation and Management	OE	3	0	0	3	3
4	22OEE04	Renewable Energy Technologies	OE	3	0	0	3	3
5	22OEE05	Electric Vehicle Technology	OE	3	0	0	3	3
6	22OME01	Applications of 3D printing Techniques	OE	3	0	0	3	3
7	22OME02	Introduction to Non-Destructive Testing	OE	3	0	0	3	3
8	22OME03	Concepts of Competitive manufacturing	OE	3	0	0	3	3
9	22OME04	Production Planning and Control	OE	3	0	0	3	3
10	22OME05	Solar Energy Technologies	OE	3	0	0	3	3
11	22OEC01	MEMS and NEMS	OE	3	0	0	3	3
12	22OEC02	Space Time Wireless Communication	OE	3	0	0	3	3
13	22OEC03	Telecommunication Network Management	OE	3	0	0	3	3
14	22OEC04	Nano Technology	OE	3	0	0	3	3
15	22OEC05	Foundation of Robotics	OE	3	0	0	3	3
16	22OEC06	Remote Sensing Concepts	OE	3	0	0	3	3
17	22OEC07	Sensors	OE	3	0	0	3	3
18	22OBM01	Basics of Microbial Technology	OE	3	0	0	3	3
19	22OBM02	Basics of Biomolecules	OE	3	0	0	3	3



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20	22OBM03	Fundamentals of Cell and Molecular Biology	OE	3	0	0	3	3
21	22OBM04	Nanomaterials and Applications	OE	3	0	0	3	3
22	22OBM05	Food, Nutrition and Health	OE	3	0	0	3	3
23	22OCE01	Drinking Water supply and Treatment	OE	3	0	0	3	3
24	22OCE02	Green building concepts	OE	3	0	0	3	3
25	22OCE03	Disaster mitigation and management	OE	3	0	0	3	3
26	22OCE04	Road safety and Management	OE	3	0	0	3	3
27	22OIT01	IT in Agricultural System	OE	3	0	0	3	3
28	22OAU01	Vehicle Technology	OE	3	0	0	3	3
29	22OAU02	Automotive Power Train System	OE	3	0	0	3	3
30	22OAU03	Autonomous Vehicle and Safety Systems	OE	3	0	0	3	3
31	22OAU04	Two-Wheeler Technology	OE	3	0	0	3	3



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REGULATION 2022

VII & VIII SEMESTER

SYLLABUS



COURSE DESCRIPTION

This course aims to provide a broad understanding about the modern values and ethical principles that have evolved and are enshrined in the Constitution of India with regard to the democratic, secular and scientific aspects. The course is designed for undergraduate students so that they could study, understand and apply these values in their day to day life.

COURSE OBJECTIVES:

- To create awareness about values and ethics enshrined in the Constitution of India
- To sensitize students about the democratic values to be upheld in the modern society.
- To inculcate respect for all people irrespective of the irreligion or other affiliations.
- To instill the scientific temper in the students' minds and develop their critical thinking.
- To promote sense of responsibility and understanding of the duties of citizen.

UNIT I DEMOCRATIC VALUES

6

Understanding Democratic values: Equality, Liberty, Fraternity, Freedom, Justice, Pluralism, Tolerance, Respect for All, Freedom of Expression, Citizen Participation in Governance - World Democracies: French Revolution, American Independence, Indian Freedom Movement.
Reading Text: Excerpts from John Stuart Mills' *On Liberty*

UNIT II SECULAR VALUES

6

Understanding Secular values - Interpretation of secularism in Indian context - Disassociation of state from religion - Acceptance of all faiths - Encouraging non-discriminatory practices.

Reading Text: Excerpt from *Secularism in India: Concept and Practice* by Ram Puniyani

UNIT III SCIENTIFIC VALUES

6

Scientific thinking and method: Inductive and Deductive thinking, Proposing and testing Hypothesis, Validating facts using evidence based approach - Skepticism and Empiricism - Rationalism and Scientific Temper.

Reading Text: Excerpt from *The Scientific Temper* by Antony Michaelis R

UNIT IV SOCIAL ETHICS

6

Application of ethical reasoning to social problems - Gender bias and issues - Gender violence - Social discrimination - Constitutional protection and policies - Inclusive practices.

Reading Text: Excerpt from *21 Lessons for the 21st Century* by Yuval Noah Harari

UNIT V SCIENTIFIC ETHICS

6

Transparency and Fairness in scientific pursuits - Scientific inventions for the betterment of society - Unfair application of scientific inventions - Role and Responsibility of Scientist in the modern society.

Reading Text: Excerpt from *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer* by Kai Bird and Martin J. Sherwin.



TEXT BOOKS:

1. R. S. Naagarazan, "Human Values and Professional Ethics", ISBN: 978-8122418361 New Age International -2006
2. William H. Shaw, "Ethics in the Workplace: Selected Readings in Business Ethics", ISBN: 978-0534626179, Thomson Wadsworth, 2005
3. Barbara MacKinnon, "Ethics: Theory and Contemporary Issues" Cengage Learning, 2017 (8th Edition)

REFERENCES:

1. The Nonreligious: Understanding Secular People and Societies, Luke W. Galen Oxford University Press, 2016.
2. Secularism: A Dictionary of Atheism, Bullivant, Stephen; Lee, Lois, Oxford University Press, 2016.
3. The Oxford Handbook of Secularism, John R. Shook, Oxford University Press, 2017.
4. The Civic Culture: Political Attitudes and Democracy in Five Nations by Gabriel A. Almond and Sidney Verba, Princeton University Press,
5. Research Methodology for Natural Sciences by Soumitro Banerjee, IISc Press, January 2022
6. https://webstor.srmist.edu.in/web_assets/downloads/2024/human-values-and-professional-ethics-ebook.pdf

OUTCOMES:

At the end of the course the Learner's would be able to

Course Name: HUMAN VALUES AND ETHICS										Course code: 22GE701				
CO	Course Outcomes									Unit	K-CO	POs	PSOs	
CO1	Discuss the awareness about values and ethics enshrined in the Constitution of India									I	K1,K2	6,7,8,9,10,11,12	1,2	
CO2	sensitize students about the democratic values to be upheld in the modern society.									II	K1,K2	6,7,8,9,10,11,12	1,2	
CO3	Discuss the respect for all people irrespective of the irreligion or other affiliations.									III	K1,K2	6,7,8,9,10,11,12	1,2	
CO4	Discuss the instill the scientific temper in the students' minds and develop their critical thinking.									IV	K1,K2	6,7,8,9,10,11,12	1,2	
CO5	Promote sense of responsibility and understanding of the duties of citizen.									V	K1,K2	6,7,8,9,10,11,12	1,2	
Remembering (K1), Understanding (K2), Applying (K3), Analyzing (K4), Evaluating (K5), Create (K6)														
CO-PO-PSO Mapping														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1						3	3	3	2	2	1	3	1	1
CO2						3	3	3	2	2	1	3	1	1
CO3						3	3	3	2	2	1	3	1	1
CO4						3	3	3	2	2	1	3	1	1
CO5						3	3	3	2	2	1	3	1	1
Low (1), Medium (2) ,High (3)														



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ELECTIVE – MANAGEMENT COURSES

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	TOTAL CONTACT PERIODS	CREDITS
1.	22GEM01	Principles of Management	HSMC	3	0	0	3	3
2.	22GEM02	Total Quality Management	HSMC	3	0	0	3	3
3.	22GEM03	Engineering Economics and Financial Accounting	HSMC	3	0	0	3	3
4.	22GEM04	Human Resource Management	HSMC	3	0	0	3	3
5.	22GEM05	Industrial Management	HSMC	3	0	0	3	3



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22GEM01

PRINCIPLES OF MANAGEMENT

L	T	P	C
3	0	0	3

COURSE OBJECTIVES:

- ☐ Sketch the Evolution of Management.
- ☐ Extract the functions and principles of management.
- ☐ Learn the application of the principles in an organization.
- ☐ Study the various HR related activities.
- ☐ Analyze the position of self and company goals towards business.

UNIT I INTRODUCTION TO MANAGEMENT AND ORGANIZATIONS 9

Definition of Management – Science or Art – Manager Vs Entrepreneur- types of managers managerial roles and skills – Evolution of Management –Scientific, human relations, system and contingency approaches– Types of Business organization- Sole proprietorship, partnership, company-public and private sector enterprises- Organization culture and Environment – Current trends and issues in Management.

UNIT II PLANNING 9

Nature and purpose of planning – Planning process – Types of planning – Objectives – Setting objectives – Policies – Planning premises – Strategic Management – Planning Tools and Techniques – Decision making steps and process.

UNIT III ORGANISING 9

Nature and purpose – Formal and informal organization – Organization chart – Organization structure – Types – Line and staff authority – Departmentalization – delegation of authority – Centralization and decentralization – Job Design - Human Resource Management – HR Planning, Recruitment, selection, Training and Development, Performance Management, Career planning and management.

UNIT IV DIRECTING 9

Foundations of individual and group behaviour– Motivation – Motivation theories – Motivational techniques – Job satisfaction – Job enrichment – Leadership – types and theories of leadership – Communication – Process of communication – Barrier in communication – Effective communication – Communication and IT.

UNIT V CONTROLLING 9

System and process of controlling – Budgetary and non - Budgetary control techniques – Use of computers and IT in Management control – Productivity problems and management – Control and performance – Direct and preventive control – Reporting.

TOTAL: 45 PERIODS



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OUTCOMES:

AT THE END OF COURSE, LEARNING WILL BE ABLE TO:

AT THE END OF COURSE, LEARNING WILL BE ABLE TO:

Course Name: Principles of Management											Course Code: 22GEM01				
CO	Course Outcomes										Unit	K-CO	POs	PSOs	
CO.1	Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling.										I	K1,K2, K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1	
CO.2	Have same basic knowledge on international aspect of management.										II	K1,K2, K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1	
CO.3	Ability to understand management concept of organizing.										III	K1,K2, K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1	
CO.4	Ability to understand management concept of directing.										IV	K1,K2, K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1	
CO.5	Ability to understand management concept of controlling.										V	K1,K2, K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1	
CO-PO-PSO Mapping															
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	
CO.1	1	1	1	1	1	1	1	1	2	2	1	3	2		
CO.2	1	1	1	1	1	1	1	1	2	2	1	3	2		
CO.3	1	1	1	1	1	1	1	1	2	2	1	3	2		
CO.4	1	1	1	1	1	1	1	1	2	2	1	3	2		
CO.5	1	1	1	1	1	1	1	1	2	2	1	3	2		

TEXT BOOKS:

1. Harold Koontz and Heinz Weihrich "Essentials of management" Tata McGraw Hill, 1998.
2. Stephen P. Robbins and Mary Coulter, "Management", Prentice Hall (India) Pvt. Ltd., 10th Edition, 2009.
3. Stephen P. Robbins, Mary Coulter, "Management", Pearson, 2020 (13th edition)

REFERENCES:

1. Robert Kreitner and Mamata Mohapatra, "Management", Biztantra, 2008.
2. Stephen A. Robbins and David A. Decenzo and Mary Coulter, "Fundamentals of Management" Pearson Education, 7th Edition, 2011.
3. Tripathy PC and Reddy PN, "Principles of Management", Tata McGraw Hill, 1999.
4. https://d3bxy9euw4e147.cloudfront.net/oscms-prodcms/media/documents/PrinciplesofManagement-OP.pdf?utm_source=chatgpt.com



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22GEM02	TOTAL QUALITY MANAGEMENT	L	T	P	C
		3	0	0	3

COURSE OBJECTIVES:

- ☐ Teach the need for quality, its evolution, basic concepts, contribution of quality gurus, TQM framework, Barriers and Benefits of TQM.
- ☐ Explain the TQM Principles for application.
- ☐ Define the basics of Six Sigma and apply Traditional tools, New tools, Benchmarking and FMEA.
- ☐ Describe Taguchi's Quality Loss Function, Performance Measures and apply Techniques like QFD, TPM, COQ and BPR.
- ☐ Illustrate and apply QMS and EMS in any organization.

UNIT I INTRODUCTION

9

Introduction - Need for quality - Evolution of quality - Definition of quality - Dimensions of product and service quality - Definition of TQM-- Basic concepts of TQM - Gurus of TQM (Brief introduction) -- TQM Framework- Barriers to TQM -Benefits of TQM.

UNIT II TQM PRINCIPLES

9

Leadership - Deming Philosophy, Quality Council, Quality statements and Strategic planning Customer Satisfaction -Customer Perception of Quality, Feedback, Customer complaints, Service Quality, Kano Model and Customer retention - Employee involvement - Motivation, Empowerment, Team and Teamwork, Recognition & Reward and Performance Appraisal-- Continuous process improvement -Juran Trilogy, PDCA cycle, 5S and Kaizen - Supplier partnership - Partnering, Supplier selection, Supplier Rating and Relationship development.

UNIT III TQM TOOLS & TECHNIQUES I

9

The seven traditional tools of quality - New management tools - Six-sigma Process Capability Bench marking - Reasons to benchmark, Benchmarking process, What to Bench Mark, Understanding Current Performance, Planning, Studying Others, Learning from the data, Using the findings, Pitfalls and Criticisms of Benchmarking - FMEA - Intent , Documentation, Stages: Design FMEA and Process FMEA.

UNIT IV TQM TOOLS & TECHNIQUES II

9

Quality circles - Quality Function Deployment (QFD) - Taguchi quality loss function - TPM - Concepts, improvement needs - Performance measures- Cost of Quality - BPR.

UNIT V QUALITY MANAGEMENT SYSTEM

9

Introduction-Benefits of ISO Registration-ISO 9000 Series of Standards-Sector-Specific Standards - AS 9100, TS16949 and TL 9000-- ISO 9001 Requirements-Implementation Documentation- Internal Audits-Registration-ENVIRONMENTAL MANAGEMENT SYSTEM: Introduction-ISO 14000 Series Standards-Concepts of ISO 14001-Requirements of ISO 14001-Benefits of EMS.

TOTAL: 45 PERIODS



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OUTCOMES:

AT THE END OF COURSE, LEARNING WILL BE ABLE TO:

Course Name: Total Quality Management		Course Code: 22GEM02			
CO	Course Outcomes	Unit	K-CO	POs	PSOs
CO.1	Ability to apply TQM concepts in a selected enterprise.	I	K1,K2, K3, K4, K5,	1,2,3,4,5, 6,7,8,9, 10,11,12	1
CO.2	Ability to apply TQM principles in a selected enterprise.	II	K1,K2, K3, K4, K5,	1,2,3,4,5, 6,7,8,9, 10,11,12	1
CO.3	Ability to understand Six Sigma and apply Traditional tools, New tools, Benchmarking and FMEA.	III	K1,K2, K3, K4, K5,	1,2,3,4,5, 6,7,8,9, 10,11,12	1
CO.4	Ability to understand Taguchi's Quality Loss Function, Performance Measures and apply QFD, TPM, COQ and BPR.	IV	K1,K2, K3, K4, K5,	1,2,3,4,5, 6,7,8,9, 10,11,12	1
CO.5	Ability to apply QMS and EMS in any organization.	V	K1,K2, K3, K4, K5,	1,2,3,4,5, 6,7,8,9, 10,11,12	1

CO-PO-PSO Mapping

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2
CO.1	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.2	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.3	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.4	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.5	1	1	1	1	1	1	1	1	2	2	1	3	2	

TEXT BOOK:

1. Dale H.Besterfield, Carol B.Michna, Glen H. Besterfield, Mary B.Sacre, Hemant Urdhwarshie and Rashmi Urdhwarshie, "Total Quality Management", Pearson Education Asia, Revised Third Edition, Indian Reprint, Sixth Impression, 2013.

2. Suganthi, L and Anand Samuel, "Total Quality Management", Prentice Hall (India) Pvt. Ltd., 2006

REFERENCES:

1 Joel.E. Ross, "Total Quality Management – Text and Cases", Routledge., 2017.

2 Kiran.D.R, "Total Quality Management: Key concepts and case studies, Butterworth – Heinemann Ltd, 2016.

3 Oakland, J.S. "TQM – Text with Cases", Butterworth – Heinemann Ltd., Oxford, Third Edition, 2003.

4. https://www.rvstcc.ac.in/assets/img/pdf/Total-Quality-Management-by-Dale-H.Besterfield-Carol-Besterfield-Michna-Glen-H-Besterfield-Mary-Besterfield-Sacre%2C-Hemant-Urdhwarshie-Rashmi-Urdhwarshie.pdf?utm_source=chatgpt.com





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22GEM03	HUMAN RESOURCE MANAGEMENT	L	T	P	C
		3	0	0	3

OBJECTIVE:

- ☐ To provide knowledge about management issues related to staffing,
- ☐ To provide knowledge about management issues related to training,
- ☐ To provide knowledge about management issues related to performance
- ☐ To provide knowledge about management issues related to compensation
- ☐ To provide knowledge about management issues related to human factors consideration and compliance with human resource requirements.

UNIT I INTRODUCTION TO HUMAN RESOURCE MANAGEMENT 9

The importance of human resources – Objective of Human Resource Management – Human resource policies - Role of human resource manager.

UNIT II HUMAN RESOURCE PLANNING 9

Importance of Human Resource Planning – Internal and External sources of Human Resources - Recruitment - Selection – Socialization.

UNIT III TRAINING AND EXECUTIVE DEVELOPMENT 9

Types of training and Executive development methods – purpose – benefits.

UNIT IV EMPLOYEE COMPENSATION 9

Compensation plan – Reward – Motivation – Career Development - Mentor – Protégé relationships.

UNIT V PERFORMANCE EVALUATION AND CONTROL 9

Performance evaluation – Feedback - The control process – Importance – Methods – grievances – Causes – Redressal methods.

TOTAL: 45 PERIODS



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OUTCOMES:

AT THE END OF COURSE, LEARNING WILL BE ABLE TO:

Course Name: Human Resource Management		Course Code: 22GEM03			
CO	Course Outcomes	Unit	K-CO	POs	PSOs
CO.1	Students would have gained knowledge on the various aspects of HRM	I	K1,K2, K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1
CO.2	Students will gain knowledge needed for success as a human resources professional.	II	K1,K2, K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1
CO.3	Students will develop the skills needed for a successful HR manager.	III	K1,K2, K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1
CO.4	Students would be prepared to implement the concepts learned in the workplace.	IV	K1,K2, K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1
CO.5	Students would be aware of the emerging concepts in the field of HRM	V	K1,K2, K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1

CO-PO-PSO Mapping

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2
CO.1	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.2	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.3	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.4	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.5	1	1	1	1	1	1	1	1	2	2	1	3	2	

TEXT BOOKS:

- Decenzo and Robbins, "Human Resource Management", 8th Edition, Wiley, 2007.
- John Bernardin. H., "Human Resource Management – An Experimental Approach", 5th Edition, Tata McGraw Hill, 2013, New Delhi.
- Luis R., Gomez-Mejia, DavidB. Balkin and Robert L. Cardy, "Managing Human Resources", 7th Edition, PHI, 2012.

REFERENCES:

- Dessler, "Human Resource Management", Pearson Education Limited, 2007.
- Gary Dessler, "Human Resource Management", Pearson, 2020 (15th edition)
- Stephen P. Robbins, Timothy A. Judge, and Neharika Vohra, "Organizational Behavior" (includes HRM content), Pearson, 2021 (18th edition).
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https://www.opentextbooks.org.hk/system/files/export/32/32088/pdf/Human_Resource_Management_32088.pdf?utm_source=chatgpt.com



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22GEM04	ENGINEERING ECONOMICS AND FINANCIAL ACCOUNTING	L	T	P	C
		3	0	0	3

COURSE OBJECTIVES:

- ☐ Understanding the concept of Engineering Economics.
- ☐ Implement various micro economics concept in real life.
- ☐ Gaining knowledge in the field of macro economics to enable the students to have better
- ☐ Understanding of various components of macro economics.
- ☐ Understanding the different procedures of pricing.
- ☐ Learn the various cost related concepts in micro economics.

UNIT I DEMAND & SUPPLY ANALYSIS 9

Managerial Economics - Relationship with other disciplines - Firms: Types, objectives and goals - Managerial decisions - Decision analysis. Demand - Types of demand - Determinants of demand - Demand function - Demand elasticity - Demand forecasting - Supply - Determinants of supply - Supply function - Supply elasticity.

UNIT II PRODUCTION AND COST ANALYSIS 9

Production function - Returns to scale - Production optimization - Least cost input - Isoquants- Managerial uses of production function. Cost Concepts - Cost function - Determinants of cost - Short run and Long run cost curves - Cost Output Decision - Estimation of Cost.

UNIT III PRICING 9

Determinants of Price - Pricing under different objectives and different market structures - Price discrimination - Pricing methods in practice.

UNIT IV FINANCIAL ACCOUNTING (ELEMENTARY TREATMENT) 9

Balance sheet and related concepts - Profit & Loss Statement and related concepts - Financial Ratio Analysis - Cash flow analysis - Funds flow analysis - Comparative financial statements - Analysis & Interpretation of financial statements.

UNIT V CAPITAL BUDGETING (ELEMENTARY TREATMENT) 9

Investments - Risks and return evaluation of investment decision - Average rate of return - Payback Period - Net Present Value - Internal rate of return.

TOTAL: 45 PERIODS





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OUTCOMES:

AT THE END OF COURSE, LEARNING WILL BE ABLE TO:

AT THE END OF COURSE, LEARNERS WILL BE ABLE TO:

Course Name: Engineering Economics and Financial Accounting											Course Code: 22GEM04				
CO	Course Outcomes										Unit	K-CO	POs	PSOs	
CO.1	Upon successful completion of this course, students will acquire the skills to apply the basics of economics										I	K1,K2,K3, K4,K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1	
CO.2	Evaluate the economic theories, cost concepts and pricing policies										II	K1,K2,K3, K4,K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1	
CO.3	Understand the market structures and integration concepts										III	K1,K2,K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1	
CO.4	Understand the measures of national income, the functions of banks and concepts of globalization										IV	K1,K2,K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1	
CO.5	Apply the concepts of financial management for project appraisal										V	K1,K2,K3, K4, K5,	1,2,3,4,5 6,7,8,9, 10,11,12	1	
CO-PO-PSO Mapping															
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	
CO.1	1	1	1	1	1	1	1	1	2	2	1	3	2		
CO.2	1	1	1	1	1	1	1	1	2	2	1	3	2		
CO.3	1	1	1	1	1	1	1	1	2	2	1	3	2		
CO.4	1	1	1	1	1	1	1	1	2	2	1	3	2		
CO.5	1	1	1	1	1	1	1	1	2	2	1	3	2		

TEXT BOOKS:

1. Panneer Selvam, R, "Engineering Economics", Prentice Hall of India Ltd, New Delhi, 2001.
2. Managerial Economics: Analysis, Problems and Cases - P. L. Mehta, Edition, 13. Publisher, Sultan Chand, 2007.
3. Donald.G. Newman, Jerome.P.Lavelle, "Engineering Economics and analysis" Engg. Press, Texas, 2010.

REFERENCES:

1. Chan S.Park, "Contemporary Engineering Economics", Prentice Hall of India, 2011.
2. Degarmo, E.P., Sullivan, W.G and Canada, J.R, "Engineering Economy", Macmillan, New York, 2011.
3. Zahid A khan: Engineering Economy, "Engineering Economy", Dorling Kindersley, 2012
4. Dr. S. N. Maheswari and Dr. S.K. Maheshwari: Financial Accounting, Vikas, 2009
- 5.

https://www.academia.edu/1924651/Engineering_Economics_Financial_Accounting?utm_source=chatgpt.com



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22GEM05	INDUSTRIAL MANAGEMENT	L	T	P	C
		3	0	0	3

COURSE OBJECTIVES :

- 1 To study the basic concepts of management; approaches to management; contributors to management studies; various forms of business organization and trade unions function in professional organizations.
- 2 To study the planning; organizing and staffing functions of management in professional organization.
3. To study the leading; controlling and decision making functions of management in professional organization.
4. To learn the organizational theory in professional organization.
5. To learn the principles of productivity and modern concepts in management in professional organization.

UNIT – I INTRODUCTION TO MANAGEMENT

9

Management: Introduction; Definition and Functions – Approaches to the study of Management – Mintzberg's Ten Managerial Roles – Principles of Taylor; Fayol; Weber; Parker – Forms of Organization: Sole Proprietorship; Partnership; Company (Private and Public); Cooperative – Public Sector Vs Private Sector Organization – Business Environment: Economic; Social; Political; Legal – Trade Union: Definition; Functions; Merits & Demerits.

UNIT – II FUNCTIONS OF MANAGEMENT – I

9

Planning: Characteristics; Nature; Importance; Steps; Limitation; Planning Premises; Strategic Planning; Vision & Mission statement in Planning– Organizing: Organizing Theory; Principles; Types; Departmentalization; Centralization and Decentralization; Authority & Responsibility – Staffing: Systems Approach; Recruiting and Selection Process; Human Resource Development (HRD) Concept and Design.

UNIT – III FUNCTIONS OF MANAGEMENT – II

9

Directing (Leading): Leadership Traits; Style; Morale; Managerial Grids (Blake-Mouton, Reddin) – Communication: Purpose; Model; Barriers – Controlling: Process; Types; Levels; Guidelines; Audit (External, Internal, Merits); Preventive Control – Decision Making: Elements; Characteristics; Nature; Process; Classifications.

UNIT – IV ORGANIZATION THEORY

9

Organizational Conflict: Positive Aspects; Individual; Role; Interpersonal; Intra Group; Inter Group; Conflict Management – Maslow's hierarchy of needs theory; Herzberg's motivation hygiene theory; McClelland's three needs motivation theory; Vroom's valence-expectancy theory – Change Management: Concept of Change; Lewin's Process of Change Model; Sources of Resistance; Overcoming Resistance; Guidelines to managing Conflict.

UNIT – V PRODUCTIVITY AND MODERN TOPICS

9

Productivity: Concept; Measurements; Affecting Factors; Methods to Improve – Modern Topics (concept, feature/characteristics, procedure, merits and demerits): Business Process Reengineering (BPR); Benchmarking; SWOT/SWOC Analysis; Total Productive Maintenance; Enterprise Resource Planning (ERP); Management of Information Systems (MIS).

TOTAL: 45 PERIODS.



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OUTCOMES:

AT THE END OF COURSE, LEARNING WILL BE ABLE TO:

Course Name: Industrial Management		Course Code: 22GEM05			
CO	Course Outcomes	Unit	K-CO	POs	PSOs
CO.1	Explain basic concepts of management; approaches to management; contributors to management studies; various forms of business organization and trade unions function in professional organizations.	I	K1,K2, K3, K4, K5,	1,2,3,4,5, 6,7,8,9, 10,11,12	1
CO.2	Discuss the planning; organizing and staffing functions of management in professional organization.	II	K1,K2, K3, K4, K5,	1,2,3,4,5, 6,7,8,9, 10,11,12	1
CO.3	Apply the leading; controlling and decision making functions of management in professional organization.	III	K1,K2, K3, K4, K5,	1,2,3,4,5, 6,7,8,9, 10,11,12	1
CO.4	Discuss the organizational theory in professional organization.	IV	K1,K2, K3, K4, K5,	1,2,3,4,5, 6,7,8,9, 10,11,12	1
CO.5	Apply principles of productivity and modern concepts in management in professional organization.	V	K1,K2, K3, K4, K5,	1,2,3,4,5, 6,7,8,9, 10,11,12	1

CO-PO-PSO Mapping

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2
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CO.2	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.3	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.4	1	1	1	1	1	1	1	1	2	2	1	3	2	
CO.5	1	1	1	1	1	1	1	1	2	2	1	3	2	

TEXT BOOKS:

1. M. Govindarajan and S. Natarajan, "Principles of Management", Prentice Hall of India, New Delhi, 2009.
2. Koontz. H. and Weihrich. H., "Essentials of Management: An International Perspective", 8th Edition, Tata McGrawhill, New Delhi, 2010.
3. Joseph J, Massie, "Essentials of Management", 4th Edition, Pearson Education, 1987.

REFERENCES:

1. Saxena, P. K., "Principles of Management: A Modern Approach", Global India Publications, 2009.
2. O.P. Khanna, "Industrial Engineering and Management", Dhanpat Rai & Co, 2019
3. T.R. Banga and S.C. Sharma, "Industrial Engineering and Management", Khanna Publishers, 2016
4. https://archive.org/details/industrial-management?utm_source=chatgpt.com



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