



!! Sabka Malik Atma !!
Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department Of Engineering Sciences and Humanity

ACAD-DI-13	Course Plan	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-07-2022		

COURSE PLAN

Name of the staff : Prof. Hemant Sonavane
Subject with code : PROFESSIONAL COMMUNICATION & ETHICS (AEC-101)
Course : FE ENGINEERING
Semester/Branch : SEM-II
Academic Year : 2023-24

Course Outcomes:

On completion of this course, the students will be able to:

1. Evaluate the dynamics of communication and effectively navigate professional arenas
2. Acquire active listening skills by comprehending various types of Speech Act.
3. Analyze different communication barriers, audience and purpose, and speak proficiently.
4. Comprehend extensive texts, technical and non-technical, to execute relevant tasks.
5. Organize and create purposeful technical writing for professional transactions.
6. Manage teams successfully, by applying ethical standards to deliver synergistic solutions

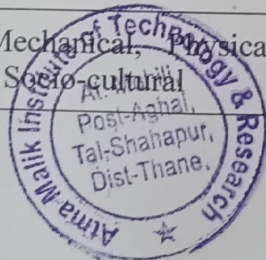




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Department Of Engineering Sciences and Humanity

Lesson Plan:

Module/Chapter Name	Lecture No.	Topic Planned	Planned Date	Conducted Date	Delivery Method	CO Mapped	Remark
1 Fundamentals of Communication	1	1.1 Introduction to Basic Concepts of Communication Definition, Objectives, Postulates.	08.01/24	08/01/24	Chalk and Board/PPT	CO 1	Done
	2	1.2 Process of Communication Stimulus, Sender, Encoding, Message, Medium, Channel, Receiver, Decoding, Feedback	09.01-2024	09/01/24			Done
	3	1.3. Methods of Communication Verbal (Written & Spoken). Non-verbal cues perceived through the five senses (Visual, Auditory, Tactile, Olfactory, Gustatory)	10/01/24	10/01/24			Done
	4	1.3. Methods of Communication Non-verbal cues transmitted cues through (The body, Voice, Space, Time, Silence)	13/01/24	17/01/24			Resub
	5	1.4 Barriers to Communication Mechanical, Physical, Semantic & Linguistic, Psychological, Socio-cultural	25/01/24	25/01/24			Done
	6	1.4 Barriers to Communication Mechanical, Physical, Semantic & Linguistic, Psychological, Socio-cultural	28/01/24	28/01/24			Done





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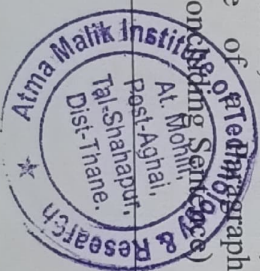
2. Developing Basic Listening Skills	7	1.5 Organizational Communication Formal (Upward, Downward, Horizontal), Informal (Grapevine)	07-02-24	07-02-24			Done
	8	1.5 Organizational Communication Formal (Upward, Downward, Horizontal), Informal (Grapevine)	09-02-24	09-02-24			Done
2. Developing Basic Listening Skills	9	2.1. Concepts of Active Listening Listening for Details Listening for Gist Listening for Inference	13-02-24	15-02-24			Resubmitted
	10	2.2. Enhancing Listening Proficiency Using Language Labs or on Open Source Platforms	17-02-24	17-02-24	Chalk and Board/PPT	CO 2	Done
3. Developing Basic Speaking Skills	11	3.1. Conversational Activities - Monologues Introducing yourself, Introducing others, One-minute impromptu speeches, Scaffolded storytelling	21-02-24	21-02-24			Done
	12	3.2. Conversational Activities - Dialogues Role plays on everyday interactions, Interviews (Find out if...), Information Gap Activities, Picture descriptions and feedback, Situational conversations	21-02-24	21-02-24	Chalk and Board/PPT	CO 3	Resubmitted
4. Developing Basic Reading	13	4.1. Verbal Aptitude Root Words, Meanings, Word Forms Synonyms, Antonyms, Collocations, Prefixes, Suffixes at a similar difficulty level of entrance tests like CAT/GRE/GMAT & proficiency tests like TOEFL/IELTS	03-03-24	03-03-24			Done
	14	4.2 Grammar Identifying Common Error Agreement, Articles, Prepositions,	07-03-24	07-03-24	Chalk and Board/PPT	CO 4	Done





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5. Developing Basic Writing Skills		Misplaced modifiers and Punctuations) Redundancies, Idioms, Clichés at a similar difficulty level of entrance tests like CAT/GRE/GMAT & proficiency tests like TOEFL/IELTS	14-03-24	14-03-24	Chalk and Board/PPT	CO 5	Done
	15	4.3. Techniques to Improve Reading Fluency and Comprehension Intensive Reading, Extensive Reading Skimming, Scanning SQ5R Method (Survey, Question, Reading, Recording, Recall, Review and Revise)	16-03-24	16-03-24			Done
	16	4.4 Reading & Summarization Skills Summarizing text to Graphic Organizers (GO) and visa-versa. Venn diagrams, Radial Diagrams (Mind maps), Tree Diagrams, Cyclic Diagrams, Flow Charts, Timelines, Matrix (Tables), Pyramids Summarizing text in point form Summarizing text in one-sentence central idea	19-03-24	19-03-24			Done
	17	5.1. Coherence & Cohesion in Writing Basic Units of Writing (Words, Sentences, Paragraphs) Coherence (Structure o	28-03-24	28-03-24			Done
	18	5.1. Coherence & Cohesion in Writing Basic Cohesive Devices (Referencing, Repetition, Substitution, Ellipsis, Transition Signals). Structure of Paragraph (Topic Sentence, Supporting Ideas, Concluding Sentence)	04-04-24	04-04-24			Done





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19	5.2. Seven Cs of Business Writing Completeness, Conciseness, Consideration, Concreteness, Clarity, Courtesy, Correctness.	65-24-24	65-24-24	CO 5	Done
20	5.3. Format & Types of Formal Letters Parts of a Formal Letter in Complete Block Style Request/Permission Letter	67-24-24	67-24-24		Done
22	5.3. Format & Types of Formal Letters Claim and Adjustment Letter, Sales Letter, E-mails	69-24-24	69-24-24		Done
23	5.4. Writing User Instructions Styles of Instruction Presentation (Impersonal, Indirect, Direct, Imperative) Describing general function/purpose of an object/process,	12-04-24	12-04-24		Done
24	5.4. Writing User Instructions Styles of Instruction Drawing labelled diagram Describing labelled part Writing User Instructions Writing Special Notices (Note, Caution, Warning, Danger)	14-04-24	18-04-24		Done





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	25	5.5. Content Creation for Social Media and Commerce Platform Blogs Poetry Keynote speeches Podcast titles	20-04-24	20-04-24		CO 5	Done
	26	Landing page Social media posts YouTube video description Screenwriting/Script Writing	22-04-24	22-04-24			Done
6.Ethical and Managerial Skills for Engineers	27	6.1. Team building Five stages of Team, (Forming, Storming, Norming, Performing and Adjourning)	24-04-24	24-04-24		CO 6	Done
	28	6.2 Goal setting SMART goals – short term and long-term goals 6.3. Ethical Considerations for Professional Integrity Fairness and Honesty , Difference between Values and Ethics, Ethical Principles, Ethical use of AI Tools	28-04-24	28-04-24			Done





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Department Of Engineering Sciences and Humanity

TEXT BOOKS:

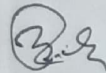
REFERENCE BOOKS:

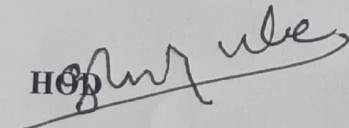
1. Communication Skills by Sanjay Kumar & Pushp Lata
2. Business Communication with Writing Improvement Exercises. Hemphill, McCormick and Hemphill
3. Business Communication: Building Critical Skills by Locker, Kitty O. Kaczmarek, Stephen Kyo
4. Effective Business Communication by Herta Murphy
5. Technical Communication: Principles and Practice by Raman and Sharma

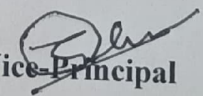
Online References:

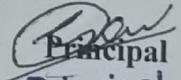
1. <https://bbclearningenglish.org>
2. <https://www.bbc.co.uk/learningenglish>




Subject In charge


HOD


Vice-Principal


Principal
Atma Malik Institute of Technology & Research
At. Moholi, Post-Aghai, Tal-Shahapur, Dist-Thane



Vishwatmak Jangli Maharaj Ashram Trust's
ATMA MALIK EDUCATIONAL & SPORTS COMPLEX, AGHAI
ATMA MALIK INSTITUTE OF TECHNOLOGY AND RESEARCH (AMRIT)
(Approved by AICTE New Delhi, Affiliated to University of Mumbai)
"ज्ञानं विज्ञानसहितम्" (Knowledge along with scientific wisdom)

DEPARTMENT OF ENGINEERING SCIENCES AND HUMANITIES

Academic Year: 2023 - 2024

Name of Faculty: Prof. Hemant Sonavane

Semester: [ODD]

Class: [F.E.]

Course Outcomes:

Course: Professional Communication & Ethics [AEC101]
On completion of this course, the students will be able to:

1. Evaluate the dynamics of communication and effectively navigate professional arenas
2. Acquire active listening skills by comprehending various types of Speech Act.
3. Analyze different communication barriers, audience and purpose, and speak proficiently.
4. Comprehend extensive texts, technical and non-technical, to execute relevant tasks.
5. Organize and create purposeful technical writing for professional transactions.
6. Manage teams successfully, by applying ethical standards to deliver synergistic solutions

PO mapping with course outcomes:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
CO1								1		3		1			
CO2								1		2		1			
CO3								1		3		2			
CO4								2	2	3		2			
CO5								1	1			1			
CO6								2	2			2			

Subject Teacher



HOD

[Signature]



Ji Sabka Malik Atma II
Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences & Humanities

ACAD-DI-13	Course Plan	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-07-2022		

COURSE PLAN

Name of the staff : Prof. Neha Prakash Sase

Subject with Course code : **FEC202**

Semester/Branch : **II (EVEN)**

Academic Year : **2024-25**

Prerequisites : Basic concepts of crystal structure. Semiconductor, Wave front and Hygyen,s principle, reflection and refraction,

interference by division of wave front, basic of superconductivity, magnetic materials.

Objectives : I) To give exposure to the topics of fundamental physics in the area of electrodynamics and relativity.

II) To give exposure to fundamentals of physics related with current technology in the field of Nanotechnology and Physics of Sensor Technology.

Outcomes: 1) Describe the diffraction through slits and its applications.

2) Apply the foundation of laser and fiber optics in development of modern communication technology.

3) Relate the basics of electrodynamics which is prerequisite for satellite communications, antenna theory etc

4) Explain the fundamentals of relativity.

5) Assimilate the wide scope of nanotechnology in modern developments and its role in emerging innovating applications.

6) Interpret and explore basic sensing techniques for physical measurements in modern instrumentations.





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Department of Engineering Sciences & Humanities

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PO mapping with course outcomes

PO	Description	CO 1	CO 2	CO 3	CO 4	CO 5	CO 6

TEXT BOOKS:

i) Engineering Physics II : Swati Bawra

REFERENCE BOOKS:

- i) A text book of Engineering Physics-Avadhanulu & Kshirsagar, S. Chand
- ii) Modern Engineering Physics- Vasudeva.S.Chand
- iii) Engineering Physics - Gaur & Gupta

Lesson Plan:

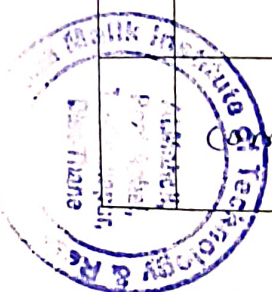
Module/ Chapter Name	Lecture No.	Topic Planned	Planned Date	Conducted Date	Delivery Method	CO Mapped	Remark
Module 1 Diffraction	1	Wave front and Huygen's principle, reflection and refraction	11/01/2024	10/11/24	Smart Board/ PPT	CO 1	completed
	2	Fresnel diffraction and Fraunhofer diffraction	12/01/2024	11/11/24			
	3	Diffraction: Fraunhofer diffraction at single slit, Diffraction Grating,	18/01/2024	16/11/24			
	4	Applications of diffraction grating; Determination of wavelength of light	19/01/2024	29/11/24	Smart Board/ PPT	CO 2	
	5	Fibre optics: Numerical Aperture for step index fibre; critical angle;	25/01/2024	21/3/24			
	6	refractive index of a material, Snell's law	01/02/2024	22/3/24			
	7	population inversion, types of pumping, resonant cavity, Einstein's equations;	02/02/2024	28/3/24			





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Module 2 Laser And Fibre Optics	8	Helium Neon laser; Nd:YAG laser; Semiconductor laser	08/02/2024	29/3/24	Smart Board/ PPT	CO 3	Completed
	9	Laser: spontaneous emission and stimulated emission; energy bands of p-n junction	09/02/2024	4/4/24			
	10	number of modes of propagation types of optical fibres Fibre optic communication system	15/02/2024	5/4/24			
	11	Electric Charges, Coulomb's law-force between two point charges	16/02/2024	9/4/24			
Module 3 Electrodynamics	12	curl and divergence in Cartesian co-ordinate system	22/02/2024	15/2/24	Smart Board/ PPT	CO 3	Completed
	13	electric dipole, electric field due to a dipole, Gauss's law, Faraday's law	23/02/2024	16/2/24			
	14	Ampere's circuital law; Maxwell's equations (Free space and time varying fields)	29/02/2024 01/03/2024	22/2/24			
	15	Cartesian co-ordinate system, Gauss's law for electrostatics Maxwell's Equation	07/03/2024	23/2/24			
Module 4 Relativity	16	Special theory of Relativity: Inertial non-inertial Frames of reference Time Dilation,	14/03/2024	4/2/24	Smart Board/ PPT	CO 4	Completed
	17	Galilean transformations, Lorentz transformations Cartesian co-ordinate system	15/03/2024	5/2/24			
	18	Scattering of electrons, Tunneling effect, Electrostatic focusing Nanomaterials	21/03/2024	29/2/24			
	19	Surface to volume ratio; Two main approaches in nanotechnology	22/03/2024	7/3/24			
Module 5 Nanotechnology	20	Tools for characterization of Nanoparticles: Scanning Electron Microscope	28/03/2024	14/3/24	Smart Board/ PPT	CO 5	Completed
	21	Methods to synthesize Nanomaterials: Ball milling, Sputtering, Vapour deposition	04/04/2024	15/3/24			
	22	Transducer concept, meaning of calibration, piezoelectric effect	05/04/2024	21/3/24			





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Department of Engineering Sciences & Humanities

Module 6 Physics Of Sensors	23	Pressure sensor: Concept of pressure sensing by capacitive, flex and inductive method	12/04/2024	12/4/24	Smart Board/ PPT	CO 6	Completed
	24	Analog pressure sensor: construction working and calibration and applications	18/04/2024	18/4/24			
	25	Piezoelectric transducers Concept of piezoelectricity, transducer as ultrasonic generator	19/04/2024	19/4/24			
	26	Optical sensor: Photodiode, construction and use of photodiode	25/04/2024	22/4/24			


Prof. Neha Prakash Sase
Subject In charge


Dr. Sachin Munde
HOD


Prof. Govind Chavan
Vice-Principal


Dr. D.D. Shinde
Principal





Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences and Humanities

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev: 00		
Date: 11-7-2022		Semester: EVEN

Course Code: FEL201		Course Name: Engineering Physics-II			Semester: II	
Name of Faculty: Prof. Neha Prakash Sase					Batch: B1	
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark
1	Determination of wavelength using Diffraction grating. (Hg/Na source)	Hg Source, Spectrometer, Diffraction grating	01	12/01/2024 19/01/2024	9/11/24	Done
2	Determination of number of lines on the grating surface using LASER Source.	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	02/02/2024 09/02/2024	17/11/24	Done
3	Determination of width of a slit using single slit diffraction experiment (laser source)	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	16/02/2024	16/12/2024	Done
4	Determination of wavelength using laser source	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	23/02/2024 01/03/2024	31/11/2024	Done
5	Study of I-V characteristics of Photo Diode	Photo diode, characteristics kit	01	15/03/2024 22/03/2024	20/3/24	Done
6	Study of PT 100 calibration and use and thermometer	PT 100, Digital multimeter	01	29/03/2024 05/04/2024	21/4/24	Done

Prof. Neha Sase

Name & Signature of Subject Incharge

Dr. Sachin Munde

Name & Signature of HOD





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Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences and Humanities

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev: 00		Semester: EVEN
Date: 11-7-2022		

Course Code: FEL201		Course Name: Engineering Physics-II			Semester: II	
Name of Faculty: Prof. Neha Prakash Sase						
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark
1	Determination of wavelength using Diffraction grating. (Hg/Na source)	Hg Source, Spectrometer, Diffraction grating	01	10/01/2024 17/01/2024	9/11/24	Done
2	Determination of number of lines on the grating surface using LASER Source.	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	24/01/2024 31/01/2024	19/11/24	Done
3	Determination of width of a slit using single slit diffraction experiment (laser source)	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	07/02/2024	7/12/24	Done
4	Determination of wavelength using laser source	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	14/02/2024 21/02/2024	2/2/24	Done
5	Study of I-V characteristics of Photo Diode	Photo diode, characteristics kit	01	06/03/2024 13/03/2024	15/3/24	Done
6	Study of PT 100 calibration and use and thermometer	PT 100, Digital multimeter	01	20/03/2024 27/03/2024	22/3/24	Done

Prof. Neha Sase

Name & Signature of Subject Incharge

Dr. Sachin Munde

Name & Signature of HOD



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Department of Engineering Sciences and Humanities

Vishwalmak Jangli Maharaj Ashram Trust's

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev: 00		Semester: EVEN
Date: 11-7-2022		

Course Code: FEL201		Course Name: Engineering Physics-II			Semester: II	
Name of Faculty: Prof. Neha Prakash Sase						
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark
1	Determination of wavelength using Diffraction grating. (Hg/Na source)	Hg Source, Spectrometer, Diffraction grating	01	12/01/2024 19/01/2024	12/11/24	Done
2	Determination of number of lines on the grating surface using LASER Source.	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	02/02/2024 09/02/2024	24/11/24	Done
3	Determination of width of a slit using single slit diffraction experiment (laser source)	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	16/02/2024	18/12/24	Done
4	Determination of wavelength using laser source	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	23/02/2024 01/03/2024	21/2/24	Done
5	Study of I-V characteristics of Photo Diode	Photo diode, characteristics kit	01	15/03/2024 22/03/2024	15/3/24	Done
6	Study of PT 100 calibration and use and thermometer	PT 100, Digital multimeter	01	29/03/2024 05/04/2024	22/3/24	Done

Prof. Neha Sase

Name & Signature of Subject Incharge

Dr. Sachin Munde

Name & Signature of HOD





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Department of Engineering Sciences and Humanities

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev: 00		Semester: EVEN
Date: 11-7-2022		

Course Code: FEL201		Course Name: Engineering Physics-II			Semester: II	
Name of Faculty: Prof. Neha Prakash Sase		Batch: B3				
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark
1	Determination of wavelength using Diffraction grating. (Hg/Na source)	Hg Source, Spectrometer, Diffraction grating	01	12/01/2024 19/01/2024	12/11/24	Done
2	Determination of number of lines on the grating surface using LASER Source.	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	02/02/2024 09/02/2024	24/11/24	Done
3	Determination of width of a slit using single slit diffraction experiment (laser source)	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	16/02/2024	18/12/24	Done
4	Determination of wavelength using laser source	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	23/02/2024 01/03/2024	21/2/24	Done
5	Study of I-V characteristics of Photo Diode	Photo diode, characteristics kit	01	15/03/2024 22/03/2024	15/3/24	Done
6	Study of PT 100 calibration and use and thermometer	PT 100, Digital multimeter	01	29/03/2024 05/04/2024	22/3/24	Done

Prof. Neha Sase

Name & Signature of Subject Incharge



Dr. Sachin Munde

Name & Signature of HOD



Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences and Humanities

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Date: 8/11/2024

NOTE – CO-PO-PSO mapping may vary as per Subject Requirement
Subject Name – Engineering Physics (FEC202)
Semester – II
Class / Scheme – FE(AII) / Rev 2019 (C scheme)
Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2				2	2	3							
CO2	1	2	2		3	2								
CO3	2	1	1	1	2	2	2							
CO4	1	1		2		2								
CO5	2	2	1	1	3	3	2							
CO6	2	2	1	1	3	2	3							

Subject In charge

Dept. Academic Coordinator



II Sabka Malik Atma II
Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Science and Humanities

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Date: 8/11/2024

NOTE – CO-PO-PSO mapping may vary as per Subject Requirement
Subject Name – Engineering Physics II (FEL 201)
Semester – II
Class / Scheme – FE(ALL)/ Rev 2019 (C scheme)
Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	1	1		2	2	2							
CO2	1	2	1		2	2								
CO3	1	2	1		1	2								

Subject In charge

Dept. Academic Coordinator



8/11/2024

Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences & Humanities



ACAD-DI-13	Course Plan	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-07-2022		

COURSE PLAN

Name of the staff : Prof. Neha Prakash Sase

Subject with Course code : FEC202

Semester/Branch : II (EVEN)

Academic Year : 2024-25

Prerequisites : Basic concepts of crystal structure. Semiconductor, Wave front and Hygyen,s principle, reflection and refraction,

interference by division of wave front, basic of superconductivity, magnetic materials.

Objectives : I) To give exposure to the topics of fundamental physics in the area of electrodynamics and relativity.

II) To give exposure to fundamentals of physics related with current technology in the field of Nanotechnology and Physics of Sensor Technology.

Outcomes: 1) Describe the diffraction through slits and its applications.

2) Apply the foundation of laser and fiber optics in development of modern communication technology.

3) Relate the basics of electrodynamics which is prerequisite for satellite communications, antenna theory etc

4) Explain the fundamentals of relativity.

5) Assimilate the wide scope of nanotechnology in modern developments and its role in emerging innovating applications.

6) Interpret and explore basic sensing techniques for physical measurements in modern instrumentations.





Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences & Humanities

Dr. Sabka Malik Atma Malik
Vishwatmak Jangli Maharaj Ashram Trust's

PO mapping with course outcomes

PO	Description	CO 1	CO 2	CO 3	CO 4	CO 5	CO 6

TEXT BOOKS:

i) Engineering Physics II : Swati Bawra

REFERENCE BOOKS:

- i) A text book of Engineering Physics-Avadhanulu & Kshirsagar, S. Chand
- ii) Modern Engineering Physics- Vasudeva.S.Chand
- iii) Engineering Physics - Gaur & Gupta

Lesson Plan:

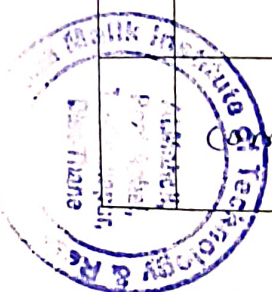
Module/ Chapter Name	Lecture No.	Topic Planned	Planned Date	Conducted Date	Delivery Method	CO Mapped	Remark
Module 1 Diffraction	1	Wave front and Huygen's principle, reflection and refraction	11/01/2024	10/11/24	Smart Board/ PPT	CO 1	completed
	2	Fresnel diffraction and Fraunhofer diffraction	12/01/2024	11/11/24			
	3	Diffraction: Fraunhofer diffraction at single slit, Diffraction Grating,	18/01/2024	16/11/24			
	4	Applications of diffraction grating; Determination of wavelength of light	19/01/2024	29/11/24	Smart Board/ PPT	CO 2	
	5	Fibre optics: Numerical Aperture for step index fibre; critical angle;	25/01/2024	21/3/24			
	6	refractive index of a material, Snell's law	01/02/2024	22/3/24			
	7	population inversion, types of pumping, resonant cavity, Einstein's equations;	02/02/2024	28/3/24			





|| Sabka Maik-Atma ||
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Department of Engineering Sciences & Humanities

Module 2 Laser And Fibre Optics	8	Helium Neon laser; Nd:YAG laser; Semiconductor laser	08/02/2024	29/3/24	Smart Board/ PPT	CO 3	Completed
	9	Laser: spontaneous emission and stimulated emission; energy bands of p-n junction	09/02/2024	4/4/24			
	10	number of modes of propagation types of optical fibres Fibre optic communication system	15/02/2024	5/4/24			
	11	Electric Charges, Coulomb's law-force between two point charges	16/02/2024	9/4/24			
Module 3 Electrodynamics	12	curl and divergence in Cartesian co-ordinate system	22/02/2024	15/2/24	Smart Board/ PPT	CO 3	Completed
	13	electric dipole, electric field due to a dipole, Gauss's law, Faraday's law	23/02/2024	16/2/24			
	14	Ampere's circuital law; Maxwell's equations (Free space and time varying fields)	29/02/2024 01/03/2024	22/2/24			
	15	Cartesian co-ordinate system, Gauss's law for electrostatics Maxwell's Equation	07/03/2024	23/2/24			
Module 4 Relativity	16	Special theory of Relativity: Inertial non-inertial Frames of reference Time Dilation,	14/03/2024	4/2/24	Smart Board/ PPT	CO 4	Completed
	17	Galilean transformations, Lorentz transformations Cartesian co-ordinate system	15/03/2024	5/2/24			
	18	Scattering of electrons, Tunneling effect, Electrostatic focusing Nanomaterials	21/03/2024	29/2/24			
	19	Surface to volume ratio; Two main approaches in nanotechnology	22/03/2024	7/3/24			
Module 5 Nanotechnology	20	Tools for characterization of Nanoparticles: Scanning Electron Microscope	28/03/2024	14/3/24	Smart Board/ PPT	CO 5	Completed
	21	Methods to synthesize Nanomaterials: Ball milling, Sputtering, Vapour deposition	04/04/2024	15/3/24			
	22	Transducer concept, meaning of calibration, piezoelectric effect	05/04/2024	21/3/24			





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Department of Engineering Sciences & Humanities

Module 6 Physics Of Sensors	23	Pressure sensor: Concept of pressure sensing by capacitive, flex and inductive method	12/04/2024	12/4/24	Smart Board/ PPT	CO 6	Completed
	24	Analog pressure sensor: construction working and calibration and applications	18/04/2024	18/4/24			
	25	Piezoelectric transducers Concept of piezoelectricity, transducer as ultrasonic generator	19/04/2024	19/4/24			
	26	Optical sensor: Photodiode, construction and use of photodiode	25/04/2024	22/4/24			


Prof. Neha Prakash Sase
Subject In charge


Dr. Sachin Munde
HOD


Prof. Govind Chavan
Vice-Principal


Dr. D.D. Shinde
Principal





Vishwatmak JangliMaharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences and Humanities

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev: 00		Semester: EVEN
Date: 11-7-2022		

Course Code: FEL201		Course Name: Engineering Physics-II			Semester: II	
Name of Faculty: Prof. Neha Prakash Sase		Batch: B1				
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark
1	Determination of wavelength using Diffraction grating. (Hg/Na source)	Hg Source, Spectrometer, Diffraction grating	01	12/01/2024 19/01/2024	9/11/24	Done
2	Determination of number of lines on the grating surface using LASER Source.	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	02/02/2024 09/02/2024	17/11/24	Done
3	Determination of width of a slit using single slit diffraction experiment (laser source)	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	16/02/2024	16/12/2024	Done
4	Determination of wavelength using laser source	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	23/02/2024 01/03/2024	31/11/2024	Done
5	Study of I-V characteristics of Photo Diode	Photo diode, characteristics kit	01	15/03/2024 22/03/2024	20/3/24	Done
6	Study of PT 100 calibration and use and thermometer	PT 100, Digital multimeter	01	29/03/2024 05/04/2024	21/4/24	Done

Prof. Neha Sase

Name & Signature of Subject Incharge

Dr. Sachin Munde

Name & Signature of HOD





Vishwatmak JangliMaharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences and Humanities

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev: 00		Semester: EVEN
Date: 11-7-2022		

Course Code: FEL201		Course Name: Engineering Physics-II			Semester: II	
Name of Faculty: Prof. Neha Prakash Sase						
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark
1	Determination of wavelength using Diffraction grating. (Hg/Na source)	Hg Source, Spectrometer, Diffraction grating	01	10/01/2024 17/01/2024	9/11/24	Done
2	Determination of number of lines on the grating surface using LASER Source.	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	24/01/2024 31/01/2024	19/11/24	Done
3	Determination of width of a slit using single slit diffraction experiment (laser source)	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	07/02/2024	7/12/24	Done
4	Determination of wavelength using laser source	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	14/02/2024 21/02/2024	2/2/24	Done
5	Study of I-V characteristics of Photo Diode	Photo diode, characteristics kit	01	06/03/2024 13/03/2024	15/3/24	Done
6	Study of PT 100 calibration and use and thermometer	PT 100, Digital multimeter	01	20/03/2024 27/03/2024	22/3/24	Done

Prof. Neha Sase

Name & Signature of Subject Incharge

Dr. Sachin Munde

Name & Signature of HOD



Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences and Humanities

Vishwalmak Jangli Maharaj Ashram Trust's

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev: 00		Semester: EVEN
Date: 11-7-2022		

Course Code: FEL201		Course Name: Engineering Physics-II			Semester: II	
Name of Faculty: Prof. Neha Prakash Sase						
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark
1	Determination of wavelength using Diffraction grating. (Hg/Na source)	Hg Source, Spectrometer, Diffraction grating	01	12/01/2024 19/01/2024	12/11/24	Done
2	Determination of number of lines on the grating surface using LASER Source.	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	02/02/2024 09/02/2024	24/11/24	Done
3	Determination of width of a slit using single slit diffraction experiment (laser source)	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	16/02/2024	18/12/24	Done
4	Determination of wavelength using laser source	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	23/02/2024 01/03/2024	21/2/24	Done
5	Study of I-V characteristics of Photo Diode	Photo diode, characteristics kit	01	15/03/2024 22/03/2024	15/3/24	Done
6	Study of PT 100 calibration and use and thermometer	PT 100, Digital multimeter	01	29/03/2024 05/04/2024	22/3/24	Done

Prof. Neha Sase

Name & Signature of Subject Incharge

Dr. Sachin Munde

Name & Signature of HOD





Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences and Humanities

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev: 00		Semester: EVEN
Date: 11-7-2022		

Course Code: FEL201		Course Name: Engineering Physics-II			Semester: II		
Name of Faculty: Prof. Neha Prakash Sase						Batch: B3	
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark	
1	Determination of wavelength using Diffraction grating. (Hg/Na source)	Hg Source, Spectrometer, Diffraction grating	01	12/01/2024 19/01/2024	12/11/24	Done	
2	Determination of number of lines on the grating surface using LASER Source.	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	02/02/2024 09/02/2024	24/11/24	Done	
3	Determination of width of a slit using single slit diffraction experiment (laser source)	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	16/02/2024	18/12/24	Done	
4	Determination of wavelength using laser source	He-Ne LASER, Optics Bench, Diffraction grating, screen	01	23/02/2024 01/03/2024	21/2/24	Done	
5	Study of I-V characteristics of Photo Diode	Photo diode, characteristics kit	01	15/03/2024 22/03/2024	15/3/24	Done	
6	Study of PT 100 calibration and use and thermometer	PT 100, Digital multimeter	01	29/03/2024 05/04/2024	22/3/24	Done	

Prof. Neha Sase

Name & Signature of Subject Incharge



Dr. Sachin Munde

Name & Signature of HOD



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Department of Engineering Sciences and Humanities

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Date: 8/11/2024

NOTE – CO-PO-PSO mapping may vary as per Subject Requirement
Subject Name – Engineering Physics (FEC202)
Semester – II
Class / Scheme – FE(AII) / Rev 2019 (C scheme)
Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2				2	2	3							
CO2	1	2	2		3	2								
CO3	2	1	1	1	2	2	2							
CO4	1	1		2		2								
CO5	2	2	1	1	3	3	2							
CO6	2	2	1	1	3	2	3							

Subject In charge

Dept. Academic Coordinator



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Department of Engineering Science and Humanities

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Date: 8/11/2024

NOTE – CO-PO-PSO mapping may vary as per Subject Requirement
Subject Name – Engineering Physics II (FEL 201)
Semester – II
Class / Scheme – FE(ALL)/ Rev 2019 (C scheme)
Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

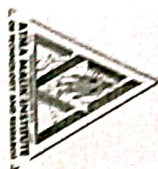
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	1	1		2	2	2							
CO2	1	2	1		2	2								
CO3	1	2	1		1	2								

Subject In charge

Dept. Academic Coordinator



8/11/2024



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Department of Engineering Sciences & Humanities

ACAD-DI-13	Course Plan	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		

COURSE PLAN

Name of the staff : Prof. Neha Prakash Sase

Subject with Course code : FEC102

Semester/Branch : I (ODD)

Academic Year : 2023-24

Prerequisites : Basic concepts of crystal structure. Semiconductor, Wave front and Hygyen,s principle reflection and refraction, interference by division of wave front, basic of superconductivity, magnetic materials.

Objectives : .
i) To Understand basic physics concepts and founding principles of technology.

ii) To develop scientific temperature for scientific observations, recording, and inference drawing essential for technology studies.

Outcomes: .
1) Apply the foundation of laser and fiber optics in development of modern communication technology.

2) Describe the diffraction through slits and its applications.

3) Relate the basics of electrodynamics which is prerequisite for satellite communications, theory

4) Explain the fundamentals of relativity.

5) Assimilate the wide scope of nanotechnology in modern developments and its role in emerging innovating applications.





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TEXT BOOKS: i) Engineering Physics I : Swati Bavra

REFERENCE BOOKS: i) A text book of Engineering Physics-Avadhanulu & Kshirsagar, S. Chand
ii) Modern Engineering Physics- Vasudeva.S.Chand
iii) Engineering Physics - Gaur & Gupta

Lesson Plan:

Module/ Chapter Name	Lecture No.	Topic Planned	Planned Date	Conducted Date	Delivery Method	CO Mapped	Remark
Quantum Physics /Chapter 1	1	Dual nature of radiation, Photoelectric effect, Matter waves ,nature of particles, de-Broglie relation	16/8/23	16/8/23	Smart Board, Notes,	CO 1	
	2	de-Broglie hypothesis of matter waves ,Properties of matter waves	17/8/23	17/8/23			
	3	Wave function, Physical interpretation of wave function, Heisenberg uncertainty principle	22/8/23	22/8/23			
	4	Non-existence of electron in nucleus, Schrodinger's time dependent wave equation	23/8/23	23/8/23			
	5	Time independent wave equation	24/8/23	24/8/23			
	6	Particle trapped in one dimensional infinite potential well quantum Computing	29/8/23	29/8/23			
	7	Numericals	29/8/23	29/8/23			
Crystallography /Chapter 2	8	Crystal Physics (Unit cell, Space lattice, Crystal structure	06/9/23	4/9/23	Smart	CO 2	
	9	Simple Cubic, Body Centered Cubic, Face Centered Cubic, Diamond Structure, Production of X-rays	06/9/23	6/9/23	Board,		
	10	Miller indices; inter planar spacing; X-ray diffraction and Bragg's law diffraction and Bragg's law;	14/9/23	14/9/23	Notes		Completed



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Semiconductor Physics /Chapter 3	11	Intrinsic and extrinsic semiconductors, Energy bands in conductors, semiconductors and insulators	26/9/23	26/9/23		CO 3	
	12	Semiconductor diode, I-V characteristics in forward and reverse bias)	27/9/23	27/9/23			
	13	Direct & indirect band gap semiconductor; Fermi level; Fermi Dirac distribution	28/10/23	28/10/23			
	14	Fermi energy level in intrinsic & extrinsic semiconductors; effect of impurity concentration	14/10/23	14/10/23	Smart		
	15	temperature on Fermi level; mobility, current density; Hall Effect; Fermi Level diagram for p-n junction	12/10/23	12/10/23	Board		
	16	Applications of semiconductors: LED, Zener diode, Photovoltaic cell	18/10/23	18/10/23	PPT		Completed
	17	Wave front and Huygens principle, reflection and refraction, Interference by division of wave front	01/11/23	02/11/23	Notes		
Interference in thin film /Chapter 4	18	Interference by division of amplitude, Interference in thin film of constant	28/11/23	03/11/23		CO 4	
	19	Wedge shaped film; Newton's rings.	02/11/23	06/11/23			
	20	Origin of colors in thin film Determination of thickness of very thin wire	26/11/23	09/11/23	Smart		
	21	Radius of curvature of lens; testing of surface flatness: Anti-reflecting films and Highly reflecting film.	28/11/23	20/11/23	Board		
	22	Determination of refractive index of liquid; wavelength of incident light; radius of curvature of lens	29/11/23	21/11/23	PPT		
Superconductors and Supercapacitors /Chapter 5	23	Electric current Superconductors: Critical temperature. critical magnetic field, Meissner's effect,	19/10/23	19/10/23	Notes	CO 5	
	24	Supercapacitors: Principle, construction, materials and applications, comparison	25/11/23	25/10/23			Completed





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Engineering Material and Applications /Chapter 6	25	Paramagnetic materials, diamagnetic materials, ferromagnetic materials, Multi ferroics Liquid crystals	26/10/23	26/10/23	CO 6	Completed
	26		21/10/23	31/10/23		
		Crystal physics, Conductors and insulators, free charges and bound charges inside a conductor				

Sase
Prof. Neha Prakash Sase
Subject In charge

Munde
Dr. Sachin Munde
HOD

Chavan
Prof. Govind Chavan
Vice - Principal

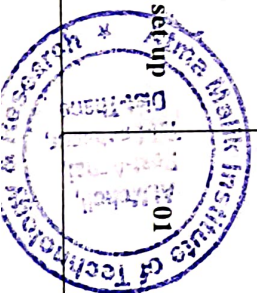
Shinde
Dr. D.D. Shinde
Principal



Dr. Sabka Malik Atmali
Vishwatmak Jangli Maharaj Ashram Trust's
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Department of Engineering Sciences And Humanities

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev : 00		
Date: 11-7-2022		
		Semester: ODD

Course Code: FEL101		Course Name: Engineering Physics-I		Semester: I		
Name of Faculty: Prof. Neha Prakash Sase				Batch: A1,A2,A3		
Ex P. No	Name of Experiment	Equipments/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark
1	Study of Zener diode as voltage regulator.	Zener Diode Characteristics Kit	01	A2 = 24/8/23	21/8/23	Completed
				A3 = 22/8/23	29/8/23	
				A1 = 24/8/23	31/8/23	
2	Study of I / V characteristics of semiconductor diode	P-N junction Diode Characteristics Kit	01	A1 = 24/10/23	16/10/23	Completed
				A2 = 12/10/23	19/10/23	
				A3 = 10/10/23	17/10/23	
3	Determination of Thin film Interference	Traveling Microns glass Plate Na vapour lamp	01	A1 = 23/10/23	23/10/23	Completed
				A2 = 30/10/23	30/10/23	
				A3 = 26/10/23	26/10/23	
4	Study of Miller Indices	Theory Experiment (PPT)	01	A1 = 28/8/23	4/9/23	Completed
				A2 = 7/9/23	14/9/23	
				A3 = 12/9/23	26/9/23	
5	Study of Hall Effect	Hall Effect set up	01	A1 = 16/10/23	16/10/23	Completed
				A2 = 17/10/23	17/10/23	
				A3 = 19/10/23	19/10/23	





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Department of Engineering Sciences And Humanities

6	Study of I/V characteristics of LED	Light emitting diode, 0-5V variable Supply, 0-10v Voltmeter, 0-50mA DC Ammeter.	01	—	—	—
				—		
				—		
				—		
7	Charging and discharging characteristics of supercapacitor.	Power supply, capacitor, volt meter, stop watch resistor.	01	—	—	—
				—		
				—		
				—		

Subp

Name & Signature of Subject Incharge

Prof Neha . P. Sase

EM
Name & Signature of HOD





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Department of Electronics & Telecommunication Engineering

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		

Date:

NOTE – CO-PO-PSO mapping may vary as per Subject Requirement

Subject Name –Engineering Physics I(FEL101)

Semester – I

Class / Scheme – FE(All) / Rev 2019 (C scheme)

Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1		1	1	2	3								
CO2	2	1												
CO3	2		2	1	2									
CO4	1		1	1	2		1							

Subject In charge

[Signature]



Dept. Academic Coordinator

[Signature]

HOD

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Atma Malik Institute of Technology & Research (AMRIT)
Department of Electronics & Telecommunication Engineering

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		Date:

NOTE – CO-PO-PSO mapping may vary as per Subject Requirement

Subject Name – Engineering Physics I

Semester – I

Class / Scheme – FE(All) / Rev 2019 (C scheme)

Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	1	2	1	2	2								
CO2	2	1	1	2	2	2								
CO3	2	1	2	1	2	2	2							
CO4	1	2	2	2	1	2								
CO5	1	1	2	1	2	3								
CO6	2	2	1	2	3	2								

Subject In charge



Dept. Academic Coordinator

DI-39
CO-PO-PSO 1

HOD



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Department of Engineering Sciences and Humanities

ACAD-DI-13	Course Plan	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

COURSE PLAN

Name of the staff : Dr.Sachin Munde

Subject with code : Engineering Chemistry-II/FEC203

Course : Engineering Chemistry-II

Semester/Branch : EVEN

Academic Year : 2023-24

Prerequisites : Basic concept of Spectroscopy, Concept of Electrochemistry, Corrosion, Green Chemistry and Synthesis of drugs Fuels and Combustion

Objectives : The concepts developed in this course will aid in quantification as well as understand the applications of several concepts in Chemistry that have been introduced at the 10 + 2 levels in schools.

Outcomes :

1. Distinguish the ranges of the electromagnetic spectrum used for exciting different molecular energy levels in various spectroscopic techniques.
2. Illustrate the concept of emission spectroscopy and describe the phenomena of fluorescence and phosphorescence in relation to it.
3. Explain the concept of electrode potential and Nernst theory and relate it to electrochemical cells.
4. Identify different types of corrosion and suggest control measures in industries.
5. Illustrate the principles of green chemistry and study environmental impact.



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Department of Engineering Sciences and Humanities

TEXT BOOKS:

Engineering Chemistry – Shashi Chawla (DhanpatRai)

REFERENCE BOOKS:

1. Engineering Chemistry - Jain & Jain, DhampatRai
2. Engineering Chemistry – Dara & Dara, S Chand
3. Green Chemistry: A textbook – V.K. Ahluwalia, Alpha Science International
4. Fundamentals of Molecular Spectroscopy (4th Edition) - C.N. Banwell, Elaine M. McCash, Tata McGraw Hill.
5. Engineering Chemistry – Payal Joshi & Shashank Deep (Oxford University Press)

Lesson Plan:

Module/Chapter Name	Lecture No.	Topic Planned	Planned Date	Conducted Date	Delivery Method	CO Mapped	Remark
Principles of Spectroscopy Module 1	1	Introduction: Principle of spectroscopy, Definition, Origin of spectrum, Classification of spectroscopy – atomic and molecular, selection rules.	9/10/2023	9/11/24	Chalk and Board/PP T's/Video	CO1	Done
	2	Table of relation between electromagnetic spectrum, types of spectroscopy and energy changes.	10/11/2023	10/11/24			Done
	1	Emission spectroscopy - Principle, Instrumentation	16/11/2023	16/11/24			Done
Applications of Spectroscopy Module 2	2	applications (Flame Photometry)	17/10/23	17/11/24		CO2	Done
	3	Introduction to fluorescence and phosphorescence	23/11/23	23/11/24			Done



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Department of Engineering Sciences and Humanities

	4	Jablonski diagram, application of fluorescence in medicine only.	24/10/2024	24/1/24			Done
Concept of Electrochemistry Module 3	3	Introduction, concept of electrode potential, Nernst equation, types of electrochemical cells,	30/1/24	30/1/24	Chalk and Board/PP T's/Video	CO3	Done
	4	concept of standard electrode with examples, electrochemical series, simplenumericals.	31/1/24	31/1/24			Done
Corrosion Module 4	5	Definition, Mechanism of Corrosion- (I) Dry or Chemical Corrosion-i) Due to oxygen ii)Due to other gases. (II)Wet or Electrochemical corrosion- Mechanism i) Evolution of hydrogen type ii) Absorption of oxygen.	6/2/24	6/2/24	Chalk and Board/PP T's/Video	CO4	Done
	6	Types of Corrosion- Galvanic cell corrosion, Concentration cell corrosion (differential aeration principle)	7/2/24	7/2/24			Done
	7	Pitting corrosion, Intergranular corrosion, Stress corrosion	13/2/24	13/02/24	Chalk and Board/PP T's/Video		Done
	8	Factors affecting the rate of corrosion- (i)Nature of metal, (ii)Nature of corroding environment.	14/2/24	14/02/24			Done
	9	Environment. Methods of corrosion control- (I)Material selection and proper designing.(II) Cathodic protection- i) Sacrificial anodic protection ii) Impressed current method,	20/2/24	20/02/24			Done
	10	(III) Metallic coatings- only Cathodic coating (tinning) and anodic coatings (Galvanising)	21/2/24	21/02/24			Done



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Green Chemistry and Synthesis of drugs Module 5	11	Introduction – Definition, significance Twelve Principles of Green chemistry,	5/3/24	05/03/24	Chalk and Board/PP T's/Video	COS	Done
	12	numerical on atom economy,	06/3/24	06/03/24			Done
	13	Conventional and green synthesis of Adipic acid, Indigo, Carbaryl, Ibuprofen, Benzimidazole	12/3/24	12/03/24			Done
	14	Benzyl alcohol, % atom economy and their numericals. Green fuel- Biodiesel	13/3/24 19/3/24	19/03/24			Done
Fuels and Combustion Module 6	15	Definition, classification, characteristics of a good fuel, units of heat (no conversions).	20/3/24	20/03/24	Chalk and Board/PP T's/Video	CO6	Done
	16	Calorific value- Definition, Gross or Higher calorific value & Net or lower calorific value, Dulong's formula &.	26/3/24	26/03/24			Done
	17	numerical for calculations of Gross and Net calorific values	27/3/24	27/03/24			Done
	18	Solid fuels- Analysis of coal- Proximate and Ultimate Analysis- numerical problems and significance.	2/4/24	02/04/24			Done
	19	Liquid fuels- Petrol- Knocking, Octane number, Cetane number, Antiknocking agents, unleaded petrol, oxygenates (MTBE), catalytic converter.	3/4/24	03/04/24			Done
	20	Combustion- Calculations for requirement of only oxygen and air (by weight and by volume only) for given solid & gaseous fuels	9/4/24 10/4/24	09/04/24 10/04/24			Done

Dr. Sachin Munde
Subject In charge

Dr. Sachin Munde
HOD

Dr. D.D. Shinde
Vice-Principal

Dr. D.D. Shinde
Principal

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Course Code: FEL202			Course Name: Engineering Chemistry-II		Semester: II	
Name of Faculty: Prof.Madhuri Patil					Batch: B1	
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark
1	Determination of Moisture content of coal.	microwave	1	12/01/2024 19/01/2024	19/01/2024	Done
2	Determination of Ash content of coal.	microwave	1	02/02/2024 09/02/2024	09/02/2024	Done
3	Synthesis of Aspirin	Glass ware	1	16/02/2024 23/02/2024	23/02/2024	Done
4	Determination of Flash point of a lubricant using Abel's apparatus	Abel's apparatus	1	01/03/2024 15/03/2024	15/03/24	Done
5	Acid value of oil	Glass ware	1	22/03/2024 29/03/2024	29/03/24	Done
6	To estimate the emf of Cu-Zn System by Potentiometry.	Potentiometer	1	05/04/2024 12/04/2024	12/04/24	Done

Prof.Madhuri Patil

Name & Signature of Subject Incharge

Name & Signature of HOD

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Course Code: FEL202			Course Name: Engineering Chemistry-II			Semester: II	
Name of Faculty: Prof.Madhuri Patil						Batch:B2	
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark	
1	Determination of Moisture content of coal.	microwave	1	10/01/2024 17/01/2024	17/11/2024	Done	
2	Determination of Ash content of coal.	microwave	1	24/01/2024 31/01/2024	31/01/2024	Done	
3	Synthesis of Aspirin	Glass ware	1	07/02/2024 14/02/2024	14/02/24	Done	
4	Determination of Flash point of a lubricant using Abel's apparatus	Abel's apparatus	1	06/03/2024 13/03/2024	13/02/24	Done	
5	Acid value of oil	Glass ware	1	20/03/2024 27/03/2024	27/03/24	Done	
6	To estimate the emf of Cu-Zn System by Potentiometry.	Potentiometer	1	03/04/2024 10/04/2024	10/04/24	Done	



Prof.Madhuri Patil

Name & Signature of Subject Incharge



Name & Signature of HOD

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Course Code: FEL202			Course Name: Engineering Chemistry-II		Semester: II	
Name of Faculty: Prof.Madhuri Patil					Batch: 33	
Exp. No.	Name of Experiment	Equipment's/ Software required	Planned Hrs.	Date of Performance	Date of Assessment	Remark
1	Determination of Moisture content of coal.	microwave	1	12/01/2024 19/01/2024	19/01/2024	Done
2	Determination of Ash content of coal.	microwave	1	02/02/2024 09/02/2024	09/02/2024	Done
3	Synthesis of Aspirin	Glass ware	1	16/02/2024 23/02/2024	23/02/24	Done
4	Determination of Flash point of a lubricant using Abel's apparatus	Abel's apparatus	1	01/03/2024 15/03/2024	15/03/24	Done
5	Acid value of oil	Glass ware	1	22/03/2024 29/03/2024	29/03/24	Done
6	To estimate the emf of Cu-Zn System by Potentiometry.	Potentiometer	1	05/04/2024 12/04/2024	12/04/24	Done



Prof.Madhuri Patil

Name & Signature of Subject Incharge



Name & Signature of HOD

Atma Malik Institute of Technology & Research (AMRIT)

Department of Engineering Sciences and Humanities

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Date: 08/01/2024

NOTE – CO-PO-PSO mapping may vary as per Subject Requirement

Subject Name – Engineering Chemistry-II

Semester – IIInd

Class / Scheme – FE / Rev 2019 (C scheme)

Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2		2		1					1				
CO2	2									1				
CO3	3													
CO4	3	1	1		1	2				1				
CO5	2	2					3			1				
CO6		2			1	2				1				

Subject In charge

Dept. Academic Coordinator

HOB

Atma Malik Institute of Technology & Research (AMRIT)
Department of Engineering Sciences and Humanities

ACAD-DI-39	CO-PO-PSO Mapping Sheet		Academic Year: 2023-24
Rev : 00			Semester: EVEN
Date: 11-7-2022			

Date:01/08/2024

NOTE – CO-PO-PSO mapping may vary as per Subject Requirement
Subject Name- Engineering Chemistry-II (FEL 202)
Class / Scheme – FE / Rev 2019 (C scheme)
Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1	3	2	1	2	1	2		1						
CO2	3	2	2	2	1	2		1						
CO3	3	2	1	2	1	2		1						
CO4	3	2	1	2	1	2		1						
CO5	3	2	2	2	1	2		1						
CO6	3	2	2	2	1	2		1						

Subject in charge

Dept. Academic Coordinator

HOD



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Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Mechanical Engineering

Academic Year-2023-24

Subject- DOE

Class- TE MECH

SEM- V

Internal Assessment- 20 Marks

Roll No.	Name of student	Total Marks out of 20	Q. 1			Q.2	
			A(5)	B(5)	C(5)	A(10)	B(10)
			CO1	CO2	CO3	CO1	CO3
1	DADHEKAR SARTHAK RASHMIKANT	19	4.5		4	10	
2	DHASADE RUSHIKESH VASUDEV	18		4	3.5	10	
3	DUPARE AMOL SURESH	18	4		3.5	10	
4	GARUD MAYUR SHRIKANT	15	4.5			10	
5	GOSWAMI SATISH NANALAL	19	4.5		4	10	
6	JADHAV MAYUR GURUNATH	16	4.5	4		7	
7	KADAM VIRAJ MANGESH	10	4.5			5	
8	KUSHWAH DEEPAK RAMESH	16	3		3.5	9	
9	PATIL BHAVIK SUNIL	19	4.5	4.5	2	10	
10	PATIL MANISH RAJENDRA	18		4	4	10	
11	RAUT GANESH SURESH	19	4.5	4.5		10	
12	RAUT KUNJAN NITENDRA	18	4		4	10	
13	SARMALKAR PAVAN PUNDALIK	AB	AB	AB	AB	AB	AB
14	SINGH SURAJ RAMSAGAR	19	4.5	4.5	2	10	
No. of students attempted the question			11	6	9	13	0
No. of students above threshold			11	6	7	13	0
Attainment %			#DIV/0!	100	100	78	100
							#DIV/0!

Course Outcome	CO attainment(%)
C01	100
C02	100
C03	78

Subject Incharge

Dept Academic Coordinator

HOD



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Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Mechanical Engineering

Academic Year-2023-24
Subject-DOE

Class- TE MECH

SEM- V

Internal Assessment- 20 Marks

Roll No.	Name of student	Total Marks out of 20	Q. 1			Q.2	
			A(5)	B(5)	C(5)	A(10)	B(10)
			CO4	CO5	CO6	CO6	CO4
1	DADHEKAR SARTHAK RASHMIKANT	17	4.5		4	8	4
2	DHASADE RUSHIKESH VASUDEV	17	4	4		9	
3	DUPARE AMOL SURESH	AB	AB	AB	AB	AB	AB
4	GARUD MAYUR SHRIKANT	AB	AB	AB	AB	AB	AB
5	GOSWAMI SATISH NANALAL	AB	AB	AB	AB	AB	AB
6	JADHAV MAYUR GURUNATH	18	4	4.5		9	
7	KADAM VIRAJ MANGESH	5	5				
8	KUSHWAH DEEPAK RAMESH	14	3		2	9	
9	PATIL BHAVIK SUNIL	AB	AB	AB	AB	AB	AB
10	PATIL MANISH RAJENDRA	17	4.5	4.5		8	
11	RAUT GANESH SURESH	9	4	3		2	
12	RAUT KUNJAN NITENDRA	AB	AB	AB	AB	AB	AB
13	SARMALKAR PAVAN PUNDALIK	10	4			6	
14	SINGH SURAJ RAMSAGAR	17	4.5	4.5		8	
No. of students attempted the question			9	5	2	8	1
No. of students above threshold			9	5	1	7	1
Attainment %			100	100	50	88	100

Course Outcome	CO attainment(%)
CO4	100
CO5	100
CO6	69

Subject
Incharge

Dept Academic
Coordinator

HOD



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Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Mechanical Engineering

Academic Year-2023-24
Subject- DOE

Class- BE MECH

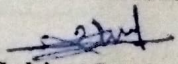
Subject Teacher: Prof. Rupali Gaikwad
SEM- V

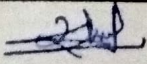
Attainment of Course Outcome through University Examination (Semester End Exam_SEE) THEORY

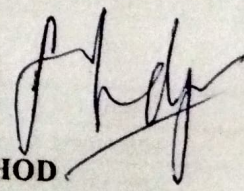
Sr. No.	Roll No.	Name	Theory	
			Maximum Marks	Marks obtained
1	1	DADHEKAR SARTHAK RASHMIKANT	80	47
2	2	DHASADE RUSHIKESH VASUDEV	80	42
3	3	DUPARE AMOL SURESH	80	48
4	4	GARUD MAYUR SHRIKANT	80	43
5	5	PATIL MANISH RAJENDRA	80	48
6	6	RAUT GANESH SURESH	80	32
7	7	RAUT KUNJAN NITENDRA	80	48
8	8	SARMALKAR PAVAN PUNDALIK	80	42
9	9	SINGH SURAJ RAMSAGAR	80	57
Average Mark			45.22222222	
Total appeared students (B)			9	
No. of students obtaining more than average marks of class (A)			5	
% CO attainment = (A/B) X 100			55.56	
AL = % age No. of students achieving target			L1	

NOTE:	Attainment Level 1	50% to 70% students scoring more than average marks of class out of the relevant maximum marks
	Attainment Level 2	70 to 80% students scoring more than average marks of class out of the relevant maximum marks
	Attainment Level 3	80- 100 % students scoring more than average marks of class out of the relevant maximum marks

Course Outcome	CO attainment(%)
C01	55.56
C02	55.56
C03	55.56
C04	55.56
C05	55.56
C06	55.56


Subject In charge


Dept. Academic Coordinator


HOD



Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Mechanical Engineering

Academic Year-2023-24
Subject- DOE

Class- BE MECH

Subject Teacher: Prof. Rupali Gaikwad
SEM- V

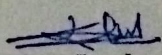
Attainment of Course Outcome through Course Exit Survey

Note - Attainment of COs through Course end survey shall be self-assessment of achievement of COs. Each student will grade four levels in self-assessment. (Level 1: Not competent, 2: Somewhat competent, 3: Competent, 4: Excellent).

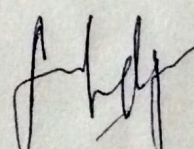
Sr.No.	Roll No.	Name of student	Attainment Level					
			CO1	CO2	CO3	CO4	CO5	CO6
1	1	DADHEKAR SARTHAK R	4	4	3	4	4	3
2	2	DHASADE RUSHIKESH VASUDEV	3	2	3	3	2	3
3	3	DUPARE AMOL SURESH	3	4	4	3	4	4
4	4	GARUD MAYUR SHRIKANT	3	3	3	3	3	3
5	5	GOSWAMI SATISH NANALAL	4	4	4	4	4	4
6	6	JADHAV MAYUR GURUNATH	3	3	4	3	3	4
7	7	KADAM VIRAJ MANGESH	3	4	4	3	4	4
8	8	KUSHWAH DEEPAK RAMESH	4	4	3	4	4	3
9	9	PATIL BHAVIK SUNIL	3	4	4	3	4	4
10	10	PATIL MANISH RAJENDRA	2	3	4	2	4	4
11	11	RAUT GANESH SURESH	3	4	4	3	4	4
12	12	RAUT KUNJAN NITENDRA	4	4	3	4	4	3
13	13	SARMALKAR PAVAN PUNDALIK	3	3	3	3	3	3
14	14	SINGH SURAJ RAMSAGAR	3	2	3	3	4	3
Total appeared students (B)			14	14	14	14	14	14
No. of students obtaining more than 50% marks (A)			13	12	14	13	13	14
% of students successfully attained Cos = (A/B)*100			93	86	100	93	93	100
AL = % age No. of students achieving target			3	2	3	3	3	3

NOTE:	Attainment Level 1	50% to 70% students attained CO successfully
	Attainment Level 2	70% to 80% students attained CO successfully
	Attainment Level 3	80% to 100% students attained CO successfully

Course Outcome	attainment
C01	93
C02	86
C03	100
C04	93
C05	93
C06	100


Subject In charge


Dept. Academic Coordinator


HOD



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Vishwatnak Jangli Maharaj Ashram Trust's

ATMA MALIK INSTITUTE OF TECHNOLOGY & RESEARCH

Department of Mechanical Engineering

Academic Year-2023-24

Subject- DOE

Subject Teacher: Prof. Rupali Gaikwad

Class- BE MECH

SEM- V

Course Code.CO	DIRECT			Course Exit survey	AVG(y)	CIE (a) [0.8x+0.2y]	SEE_TH(b)	CO Attainment [0.6a+0.4b]	Level
	IA1	IA2	AVG(x)						
MEDLO7041.1	100		100	93	93	99	50	79	2.37
MEDLO7041.2	100		100	86	86	97	50	78	2.35
MEDLO7041.3	78		78	100	100	82	50	69	2.08
MEDLO7041.4		100	100	89	89	98	50	79	2.36
MEDLO7041.5		100	100	93	93	99	50	79	2.37
MEDLO7041.6		69	69	93	93	74	50	64	1.92

[Signature]
Subject In charge

[Signature]
Dept. Academic Coordinator

[Signature]
HOD



Academic Year-2023-24
Sub - DOE

Subject Teacher: Prof. R. S. Gaikwad
SEM - V

CLASS - B.E.MECH

Course	CO	ALCO	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO-1		PSO-2				
			Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)			
MEDLO 5012D OE	1	2.37	3	2.4			3	2.4											1	0.79					1	0.79							
	2	2.34	2	1.6			2	1.6														1	0.78			2	1.56						
	3	2.08	2	1.4	3	2.1			3	2.08		0.00	2	1.39												1	0.69						
	4	2.36	3	2.4			3	2.36			1	0.79				1	+						1	0.79	1	0.79							
	5	2.37	2	1.6			2	1.6			2	1.58					2	1.06								1	0.79	1	0.79				
	6	1.92	2	1.3	3	1.9			3	1.92	1	0.6				1	0.64	1	0.43	2	1.28					1	0.43						
Average			2.3	1.8	3.0	2.0	2.5	2.0	3.0	2.0	1.3	0.8	2.0	1.4	1.0	0.6	1.3		1.5	1.0			1.0	0.8	1.0	0.7	1.3	1.0	1.0	0.8			
Attainment of POI (z) = (Avg. x / Avg.y) X 3			2.3		2.0		2.4		2.0		1.7		2.1		1.9		0.0		2.1		#DIV/0!		2.4		2.0		2.3		2.4				

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HOD

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Dept. Academic Coordinator

[Signature]

Subject In charge



!! Sabka Malik Atma!!
Vishwatmak Jangli Maharaj Ashram Trust's

Atma Malik Institute of Technology & Research (AMRIT)
Department of Mechanical Engineering

Academic Year-2023-24

Subject-Design of Mechanical System

Class- BE MECH

SEM- VII

Internal Assessment- 1 Marks

Roll No.	Name of student	Total Marks out of 20	Q. 1			Q.2	
			A(5)	B(5)	C(5)	A(10)	B(10)
			CO1	CO2	CO3	CO2	CO3
1	Adhikari Yadnesh Sunil	9	4	4.5			
2	Bhoir Viresh Suresh	20	4.5	5		10	
3	Bhovare Sahil Santosh	10	3	1		6	
4	Dalvi Sameer Krushna	13	4	3		6	
5	Dalvi Nitin Pandharinath	AB	AB	AB	AB	AB	AB
6	Dhodade Ishvar Shantaram	12	3	4.5		4	
7	Gajakosh Vicky Anil	14	4			10	
8	Gharat Ashish Subhash	16	4	2		10	
9	Gharat Manish Vishwanath	16	4	2		10	
10	Gharat Ruchit Chandrakant	13	3			10	
11	Jadhav Harshad Sitaram	18	4.5	3		10	
12	Jadhav Mrunali Vilas	9	4			5	
13	Jadhav Shubham Sanjay	9	1	3		5	
14	Jadhav Suraj Balu	4	1			3	
15	Mope Pratik Ashok	9	4	5			
16	More Kunal Ravindra	2	2				
17	Muknak Suraj Subhash	15		5		10	
18	Pargaonkar Saksham Madhukar	17	3	4		10	
19	Patare Tejas Dattatray	9	4			5	
20	Patil Abhijit Vitthal	8	3	5			
21	Patil Bhavik Sudhakar	10	3	4.5		2	
22	Patil Nirag Rajendra	19	4	5		10	
23	Patil Sanket Vijay	19	3.5	5		10	
24	Patil Tejas Dilip	15	5	2		10	
25	Patil Vinit Mohan	9	4	5			
26	Pawar Chaitali Krushna	5	3	1		1	2
27	Prajapati Vijay Kumar Karmnath	6	1	5			
28	Rayat Mayuresh Eknath	14	2	5		7	
29	Sapat Suraj Vijay	8	3	5			
30	Sathe Imran Iqbal	AB	AB	AB	AB	AB	AB
31	Tayade Ganesh Vasant	17	4	5		8	
32	Thakare Shivam Tanaji	18	3	4.5		10	
33	Thakare Vilas Ashok	11	4	3		4	
34	Mahale Hemlata Raghunath	AB	AB				
35	Kalaskar Shubham Subhash	9	2	5		2	
No. of students attempted the question			31	26	0	25	1
No. of students above threshold			22	20	0	19	1
Attainment %			71	77	0	76	100

Course Outcome	CO attainment(%)
CO1	71
CO2	77
CO3	100

Subject Incharge

Dept. Academic Coordinator

HOD



॥ Satka Malik Atma ॥
Vishwamak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Mechanical Engineering

Academic Year-2023-24
Subject-Design of Mechanical System

Class- BE MECH

SEM- VII

Internal Assessment- 2 Marks

Roll No.	Name of student	Total Marks out of 20	Q. 1			Q.2	
			A(5)	B(5)	C(5)	A(10)	B(10)
			CO5	CO4	CO5	CO4	CO6
1	Adhikari Yadnesh Sunil	13	3.5			6	10
2	Bhoir Viresh Suresh	19	4.5	4.5		10	
3	Bhovare Sahil Santosh	15		4	4.5	6	
4	Dalvi Sameer Krushna	15	4	4.5		6	
5	Dalvi Nitin Pandharinath	16	4.5	4.5		6.5	
6	Dhodade Ishvar Shantaram	15	4.5	4.5		6	
7	Gajakosh Vicky Anil	9	4.5	4.5			
8	Gharat Ashish Subhash	AB					
9	Gharat Manish Vishwanath	17	4.5		4.5	8	
10	Gharat Ruchit Chandrakant	13	4.5		4.5	4	
11	Jadhav Harshad Sitaram	19	4.5	4.5			10
12	Jadhav Mrunali Vilas	10	3	4.5		2	
13	Jadhav Shubham Sanjay	11	4.5		4.5	2	
14	Jadhav Suraj Balu	15		4.5	4.5		6
15	Mope Pratik Ashok	13	4.5			8	
16	More Kunal Ravindra	15	4	4.5		6	
17	Muknak Suraj Subhash	11	4.5		4.5	2	
18	Pargaonkar Saksham Madhukar	10				10	
19	Patare Tejas Dattatray	12	4		4.5	3	
20	Patil Abhijit Vitthal	13	4.5		3	5	
21	Patil Bhavik Sudhakar	12	3		4	5	
22	Patil Nirag Rajendra	19	4.5	4.5		10	
23	Patil Sanket Vijay	18	4.5	4.5		9	
24	Patil Tejas Dilip	17	4.5		3	9	
25	Patil Vinit Mohan	18	4.5	4		9	
26	Pawar Chaitali Krushna	18	4	4.5		9	
27	Prajapati Vijay Kumar Karmnath	17	4	4		9	
28	Rayat Mayuresh Eknath	7	3	4	3		
29	Sapat Suraj Vijay	11	4		4	3	
30	Sathe Imran Iqbal	15	4.5	4.5		6	
31	Tayade Ganesh Vasant	16	4	4		8	
32	Thakare Shivam Tanaji	13	4			9	
33	Thakare Vilas Ashok	16	4.5	4.5		7	
34	Mahale Hemlata Raghunath	17	4.5	4.5		8	
35	Kalaskar Shubham Subhash	AB					
No. of students attempted the question			24	14	11	23	2
No. of students above threshold			24	14	11	23	2
Attainment %			100	100	100	100	100

Course Outcome	CO attainment(%)
CO4	100
CO5	100
CO6	100

Subject Incharge

Dept. Academic Coordinator

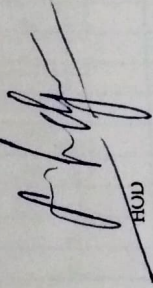
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Attainment of Course Outcome through Assignments

Roll No.	Name of student	CO1			CO2			CO3			CO4			CO5			CO6		
		Max Marks	Obtained	% marks	Max Marks	Obtained	% marks	Max Marks	Obtained	% marks	Max Marks	Obtained	% marks	Max Marks	Obtained	% marks	Max Marks	Obtained	% marks
1	Adhikari Yashesh Sumil	10	5	50	10	5	50	10	5	50	10	6	60	10	6	60	10	6	60
2	Bhoir Viresh Suresh	10	9	90	10	10	100	10	10	100	10	10	100	10	10	100	10	10	100
3	Bhore Sahil Santhosh	10	7	70	10	7	70	10	7	70	10	6	60	10	6	60	10	6	60
4	Dalvi Sameer Krishna	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80
5	Dalvi Nitin Pandharnath	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80
6	Dhodade Ishvar Shantaram	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60
7	Gajkesh Vicky Anil	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60
8	Gharat Ashish Subhash	10	6	60	10	6	60	10	6	60	10	7	70	10	7	70	10	7	70
9	Gharat Manish Vishwanath	10	7	70	10	7	70	10	7	70	10	8	80	10	8	80	10	8	80
10	Gharat Ruchit Chandrakant	10	7	70	10	7	70	10	7	70	10	8	80	10	8	80	10	8	80
11	Jadhav Harshad Sitaram	10	10	100	10	10	100	10	10	100	10	10	100	10	10	100	10	10	100
12	Jadhav Mrunali Vilas	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60
13	Jadhav Shubham Sanjay	10	7	70	10	7	70	10	7	70	10	7	70	10	7	70	10	7	70
14	Jadhav Suraj Balu	10	6	60	10	5	50	10	5	50	10	5	50	10	5	50	10	5	50
15	Mope Pratik Ashok	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80
16	More Kunal Ravindra	10	7	70	10	7	70	10	7	70	10	7	70	10	7	70	10	7	70
17	Muknak Suraj Subhash	10	5	50	10	5	50	10	5	50	10	5	50	10	5	50	10	5	50
18	Pargaonkar Saksham Madhukar	10	5	50	10	5	50	10	5	50	10	5	50	10	5	50	10	5	50
19	Patil Tejas Dattatray	10	5	50	10	5	50	10	5	50	10	5	50	10	5	50	10	5	50
20	Patil Abhijit Vinhal	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80
21	Patil Bhavik Sudhakar	10	6	60	10	6	60	10	6	60	10	7	70	10	7	70	10	7	70
22	Patil Nimg Rajendra	10	10	100	10	10	100	10	10	100	10	10	100	10	10	100	10	10	100
23	Patil Sanket Vijay	10	10	100	10	10	100	10	10	100	10	10	100	10	10	100	10	10	100
24	Patil Tejas Dilip	10	7	70	10	7	70	10	7	70	10	8	80	10	8	80	10	8	80
25	Patil Vinit Mohan	10	5	50	10	5	50	10	5	50	10	5	50	10	5	50	10	5	50
26	Pawar Chaitali Krishna	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80
27	Prajapati Vijay Kumar Karmnath	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60
28	Ravat Mayuresh Eknath	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60
29	Sapat Suraj Vijay	10	7	70	10	7	70	10	7	70	10	7	70	10	7	70	10	7	70
30	Sathe Inrun Iqbal	10	7	70	10	7	70	10	7	70	10	6	60	10	6	60	10	6	60
31	Tayade Ganesh Vasant	10	8	80	10	6	60	10	6	60	10	6	60	10	6	60	10	6	60
32	Thakare Shivam Tanaji	10	8	80	10	7	70	10	7	70	10	7	70	10	7	70	10	7	70
33	Thakare Vilas Ashok	10	9	90	10	8	80	10	8	80	10	8	80	10	8	80	10	8	80
34	Mahale Hemlata Raghunath	10	9	90	10	9	90	10	9	90	10	9	90	10	9	90	10	9	90
Total appeared students (B)		34			34			34			34			34			34		
No. of students obtaining more than 50% marks (A)		29			28			28			29			29			29		
% CO attainment = (A/B) X 100		85.29			82.35			82.35			85.29			85.29			85		
AL = % age No. of students achieving target		3			3			3			3			3			3		
AL 1: 50 - 70 %																			

NOTE:	Attainment Level 1	50% to 70% students scoring more than 50% marks out of the relevant maximum marks
	Attainment Level 2	70 to 80% students scoring more than 50% marks out of the relevant maximum marks
	Attainment Level 3	80 to 100 % students scoring more than 50% marks out of the relevant maximum marks

Subject Incharge
Dept. Academic Coordinator


HOD



!! Sabka Malik Atma !!
Vishwamvak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Mechanical Engineering

Academic Year-2023-24
Subject-Design of Mechanical
System

Class- BE MECH

Subject Teacher: Prof. R. S. Gaikwad
SEM- VII

Attainment of Course Outcome through University Examination(Semester End Exam_SEE) THEORY

Sr. No.	Roll No.	Name	Theory	
			Maximum Marks	Marks obtained
1	1	Adhikari Yadnesh Sunil	80	26
2	2	Bhoir Viresh Suresh	80	53
3	3	Bhovare Sahil Santosh	80	50
4	4	Dalvi Sameer Krushna	80	37
5	5	Dalvi Nitin Pandharinath	80	36
6	6	Dhodade Ishvar Shantaram	80	14
7	7	Gajakosh Vicky Anil	80	AB
8	8	Gharat Ashish Subhash	80	34
9	9	Gharat Manish Vishwanath	80	28
10	10	Gharat Ruchit Chandrakant	80	32
11	11	Jadhav Harshad Sitaram	80	54
12	12	Jadhav Mrunali Vilas	80	37
13	13	Jadhav Shubham Sanjay	80	41
14	14	Jadhav Suraj Balu	80	41
15	15	Mope Pratik Ashok	80	33
16	16	More Kunal Ravindra	80	32
17	17	Muknak Suraj Subhash	80	36
18	18	Pargaonkar Saksham Madhukar	80	54
19	19	Patare Tejas Dattatray	80	34
20	20	Patil Abhijit Vitthal	80	32
21	21	Patil Bhavik Sudhakar	80	27
22	22	Patil Nirag Rajendra	80	45
23	23	Patil Sanket Vijay	80	45
24	24	Patil Tejas Dilip	80	41
25	25	Patil Vinit Mohan	80	47
26	26	Pawar Chaitali Krushna	80	50
27	27	Prajapati Vijay Kumar Karminath	80	48
28	28	Rayat Mayuresh Eknath	80	AA
29	29	Sapat Suraj Vijay	80	41
30	30	Sathe Imran Iqbal	80	45
31	31	Tayade Ganesh Vasant	80	44
32	32	Thakare Shivam Tanaji	80	39
33	33	Thakare Vilas Ashok	80	32
34	34	Mahale Hemlata Raghunath	80	32
Average Mark				38.75
Total appeared students (B)				33
No. of students obtaining more than average marks of class (A)				16
% CO attainment = (A/B) X 100				48.48
AL = % age No. of students achieving target				1

Course Outcome	CO attainment(%)
C01	48.48
C02	48.48
C03	48.48
C04	48.48
C05	48.48
C06	48.48

NOTE:	Attainment Level 1	50% to 70% students scoring more than average marks of class out of the relevant maximum marks
	Attainment Level 2	70 to 80% students scoring more than average marks of class out of the relevant maximum marks
	Attainment Level 3	80- 100 % students scoring more than average marks of class out of the relevant maximum marks

Subject Incharge

Dept. Academic Coordinator

HOD



Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
 Department of Mechanical Engineering

Academic Year-2023-24

Subject-DMS

Class- BE MECH

Subject Teacher: Prof. R. S. Gaikwad
 SEM- VII

Attainment of Course Outcome through Course Exit Survey

Note - Attainment of COs through Course end survey shall be self-assessment of achievement of COs. Each student will grade four levels in self-assessment. (Level 1: Not competent, 2: Somewhat competent, 3: Competent, 4: Excellent).

Sr.No.	Roll No.	Name of student	Attainment Level					
			CO1	CO2	CO3	CO4	CO5	CO6
1	1	Adhikari Yadnesh Sunil	4	3	4	4	3	4
2	2	Bhoir Viresh Suresh	3	3	2	3	3	3
3	3	Bhovare Sahil Santosh	3	4	3	2	3	3
4	4	Dalvi Sameer Krushna	3	2	3	2	3	3
5	5	Dalvi Nitin Pandharinath	3	4	4	3	4	3
6	6	Dhodade Ishvar Shantaram	3	3	3	3	3	3
7	7	Gajakosh Vicky Anil	4	2	4	3	3	3
8	8	Gharat Ashish Subhash	3	3	4	4	3	3
9	9	Gharat Manish Vishwanath	3	4	4	3	3	3
10	10	Gharat Ruchit Chandrakant	4	4	3	3	4	3
11	11	Jadhav Harshad Sitaram	3	2	3	2	3	3
12	12	Jadhav Mrunali Vilas	3	4	4	3	4	3
13	13	Jadhav Shubham Sanjay	3	3	3	3	3	3
14	14	Jadhav Suraj Balu	4	4	4	3	3	3
15	15	Mope Pratik Ashok	3	3	4	4	3	3
16	16	More Kunal Ravindra	3	4	4	3	3	3
17	17	Muknak Suraj Subhash	4	4	3	3	4	3
18	18	Pargaonkar Saksham Madhukar	3	2	3	2	3	3
19	19	Patare Tejas Dattatray	3	4	4	3	4	3
20	20	Patil Abhijit Vitthal	3	3	3	3	3	3
21	21	Patil Bhavik Sudhakar	4	4	4	3	3	3
22	22	Patil Nirag Rajendra	3	3	4	4	3	3
23	23	Patil Sanket Vijay	3	4	4	3	3	3
24	24	Patil Tejas Dilip	4	4	3	3	4	3
25	25	Patil Vinit Mohan	3	4	4	3	3	3
26	26	Pawar Chaitali Krushna	3	4	4	3	3	3
27	27	Prajapati Vijay Kumar Karmnath	3	4	4	3	3	3
28	28	Rayat Mayuresh Eknath	3	4	4	3	3	3
29	29	Sapat Suraj Vijay	3	4	4	3	3	3
30	30	Sathe Imran Iqbal	3	4	4	3	3	3
31	31	Tayade Ganesh Vasant	3	4	4	3	3	3
32	32	Thakare Shivam Tanaji	3	4	4	3	3	3
33	33	Thakare Vilas Ashok	3	4	4	3	3	3
34	34	Mahale Hemlata Raghunath	3	4	4	3	3	3
35	35	Kalaskar Shubham Subhash	3	4	4	3	3	3
Total appeared students (B)			10	10	10	10	10	10
No. of students obtaining more than 50% marks (A)			10	8	9	8	10	10
% of students successfully attained Cos = (A/B)*100			100	80	90	80	100	100
AL = % age No. of students achieving target			3	2	3	3	3	3

Course Outcome	CO attainment(%)
C01	100
C02	80
C03	90
C04	80
C05	100
C06	100

NOTE:	Attainment Level 1	50% to 70% students attained CO successfully
	Attainment Level 2	70% to 80% students attained CO successfully
	Attainment Level 3	80% to 100% students attained CO successfully

Subject Incharge

Dept. Academic Coordinator

HOD



Vishwatmak Jangli Maharaj Ashram Trust's
ATMA MALIK INSTITUTE OF TECHNOLOGY & RESEARCH
 Department of Mechanical Engineering

!! Sabka Malik Atma!!

Academic Year-2023-24
 Subject-DMS

Class- BE MECH

Subject Teacher: Prof. R. S. Galkwad
 SEM- VII

Course Code.CO	DIRECT				Course Exit survey	AVG(y)	CIE (a) [0.8x+0.2y]	SEE_TH(b)	CO Attainment [0.6a+0.4b]	Level
	IA1	IA2	ASSIGNMENT	AVG(x)						
MEC701.1	71		85.29411765	78	100	100	83	48.48	69	2.07
MEC701.2	77		82.35294118	80	80	80	80	48.48	67	2.02
MEC701.3	100		82.35294118	91	90	90	91	48.48	74	2.22
MEC701.4		100	85.29411765	93	80	80	90	48.48	73	2.20
MEC701.5		100	85.29411765	93	100	100	94	48.48	76	2.28
MEC701.6		100	85	93	100	100	94	48.48	76	2.28

NOTE:	Attainment Level 1	50% to 70% students attained CO successfully
	Attainment Level 2	70% to 80% students attained CO successfully
	Attainment Level 3	80% to 100% students attained CO successfully

Subject Incharge

Dept. Academic Coordinator

HOD



!! Sabka Malik Atma !!
Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research
Department of Mechanical Engineering

Academic Year-2023-24

Course name- Design of Mechanical System

Class- BE MECH

SEM- VII

Course	CO	ALCO	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO-1		PSO-2	
			Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)
DMS (MEC701)	1	2.1	3	2.1	1	0.7	1	0.7			2	1.4							1	0.7			1	0.7	1	0.7				
	2	2.0	2	1.3	1	0.7	2	1.3			2	1.3																		
	3	2.2	2	1.5	2	1.5	2	1.5			2	1.5	1	0.7	1	0.7			1	0.7			2	1.5	1	0.7	1	0.7	2	1.5
	4	2.2	2	1.5	2	1.5	2	1.5			2	1.5	1	0.7	1	0.7	1	0.7					2	1.5	1	0.7	1	0.7	2	1.5
	5	2.3	2	1.5	3	2.3	3	2.3	3	2.3	2	1.5	3	2.3	3	2.3			1	0.8	1	0.8	1	0.8	1	0.8	1	0.8	1	0.8
	6	2.3	3	2.3	2	1.5	3	2.3	2	1.5	2	1.5	2	1.5	1	0.8	1	0.8	2	1.5	2	1.5					3	2.3	2	1.5
Average			2.3333	1.7	1.8333	1.4	2.1667	1.6	2.5	1.9	2.0	1.5	1.8	1.3	1.5	1.1	1.0	0.7	1.2	0.9	1.5	1.1	1.5	1.1	1.0	0.7	1.5	1.1	1.6	1.2
Attainment of POi (z) = (Avg. x / Avg.y) X 3			2.2		2.2		2.2		2.3		2.2		2.3		2.3		2.2		2.2		2.3		2.2		2.2		2.2		2.2	

$$Attn = \left(\frac{ALCO}{3} \right) \times Map$$

Subject Incharge

Dept. Academic Coordinator

HOD



!! Sabka Malik Atma!!

Vishwatmak Jangli Maharaj Ashram Trust's

Atma Malik Institute of Technology & Research (AMRIT)

Department of MECH Engineering
Academic Year: 2023-24

Semester -VII

Class: BE

Subject: DMS Lab

Subject Teacher: Prof. Rupali Gaikwad

Attainment of Course Outcome through Laboratory

Sr.No.	Roll No.	Name of student	EXPT 1	EXPT 2	EXPT 3	EXPT 4	EXPT 5
			Obtained	Obtained	Obtained	Obtained	Obtained
1	1	Adhikari Yadnesh Sunil	5	5	5	5	5
2	2	Bhoir Viresh Suresh	10	10	10	10	10
3	3	Bhovare Sahil Santosh	7	7	7	7	7
4	4	Dalvi Sameer Krushna	8	8	7	9	9
5	5	Dalvi Nitin Pandharinath	8	8	8	8	8
6	6	Dhodade Ishvar Shantaram	7	7	6	7	7
7	7	Gajakosh Vicky Anil	6	6	6	6	6
8	8	Gharat Ashish Subhash	7	7	7	7	7
9	9	Gharat Manish Vishwanath	8	8	8	8	8
10	10	Gharat Ruchit Chandrakant	7	7	7	7	8
11	11	Jadhav Harshad Sitaram	10	10	10	10	9
12	12	Jadhav Mrunali Vilas	6	6	6	6	6
13	13	Jadhav Shubham Sanjay	7	7	7	8	8
14	14	Jadhav Suraj Balu	6	6	6	6	6
15	15	Mope Pratik Ashok	7	7	7	7	7
16	16	More Kunal Ravindra	7	7	7	7	7
17	17	Muknak Suraj Subhash	6	6	6	6	6
18	18	Pargaonkar Saksham Madhukar	6	6	6	6	6
19	19	Patare Tejas Dattatray	6	6	6	6	6
20	20	Patil Abhijit Vitthal	8	8	8	8	8
21	21	Patil Bhavik Sudhakar	8	8	7	7	7
22	22	Patil Nirag Rajendra	10	10	10	10	9
23	23	Patil Sanket Vijay	10	10	9	10	10
24	24	Patil Tejas Dilip	8	8	8	8	7
25	25	Patil Vinit Mohan	5	5	5	5	5
26	26	Pawar Chaitali Krushna	7	7	7	7	7
27	27	Prajapati Vijay Kumar Karmnath	7	7	6	6	6
28	28	Rayat Mayuresh Eknath	6	6	6	6	6
29	29	Sapat Suraj Vijay	7	7	7	7	7
30	30	Sathe Imran Iqbal	7	7	7	7	7
31	31	Tayade Ganesh Vasant	6	6	6	6	6
32	32	Thakare Shivam Tanaji	8	8	8	8	8
33	33	Thakare Vilas Ashok	9	9	9	9	8
34	34	Mahale Hemlata Raghunath	9	9	9	9	9
CO mapped			CO1, CO2	CO3	CO4	CO5	CO6
Total appeared students (B)			34	34	34	34	34
No. of students obtaining more than 50% marks (A)			32	32	32	32	32
% CO attainment = (A/B) X 100			94	94	94	94	94
AL = % age No. of students achieving target AL 1: 50 - 70 AL 2: 70 - 80% AL 3: 80 - 100%			3	3	3	3	3

NOTE:	Attainment Level 1	50% to 70% students scoring more than average marks of class out of the relevant maximum marks
	Attainment Level 2	70 to 80% students scoring more than average marks of class out of the relevant
	Attainment Level 3	80- 100 % students scoring more than average marks of class out of the relevant maximum marks

Subject Incharge Dept. Academic Coordinator

HOD



!! Sabka Malik Atma!!

Vishwatmak Jangli Maharaj Ashram Trust's

Atma Malik Institute of Technology & Research (AMRIT)**Attainment of Course Outcome through Course Exit Survey**

Note - Attainment of COs through Course exit survey shall be self-assessment of achievement of COs.

Sr.No.	Roll No.	Name of student	Attainment Level					
			CO1	CO2	CO3	CO4	CO5	CO6
1	1	Adhikari Yadnesh Sunil	4	3	4	4	3	4
2	2	Bhoir Viresh Suresh	3	3	2	3	3	3
3	3	Bhovare Sahil Santosh	3	4	3	2	3	3
4	4	Dalvi Sameer Krushna	3	2	3	2	3	3
5	5	Dalvi Nitin Pandharinath	3	4	4	3	4	3
6	6	Dhodade Ishvar Shantaram	3	3	3	3	3	3
7	7	Gajakosh Vicky Anil	4	2	4	3	3	3
8	8	Gharat Ashish Subhash	3	3	4	4	3	3
9	9	Gharat Manish Vishwanath	3	4	4	3	3	3
10	10	Gharat Ruchit Chandrakant	4	4	3	3	4	3
11	11	Jadhav Harshad Sitaram	3	2	3	2	3	3
12	12	Jadhav Mrunali Vilas	3	4	4	3	4	3
13	13	Jadhav Shubham Sanjay	3	3	3	3	3	3
14	14	Jadhav Suraj Balu	4	4	4	3	3	3
15	15	Mope Pratik Ashok	3	3	4	4	3	3
16	16	More Kunal Ravindra	3	4	4	3	3	3
17	17	Muknak Suraj Subhash	4	4	3	3	4	3
18	18	Pargaonkar Saksham Madhukar	3	2	3	2	3	3
19	19	Patare Tejas Dattatray	3	4	4	3	4	3
20	20	Patil Abhijit Vitthal	3	3	3	3	3	3
21	21	Patil Bhavik Sudhakar	4	4	4	3	3	3
22	22	Patil Nirag Rajendra	3	3	4	4	3	3
23	23	Patil Sanket Vijay	3	4	4	3	3	3
24	24	Patil Tejas Dilip	4	4	3	3	4	3
25	25	Patil Vinit Mohan	3	4	4	3	3	3
26	26	Pawar Chaitali Krushna	3	4	4	3	3	3
27	27	Prajapati Vijay Kumar Karmnath	3	4	4	3	3	3
28	28	Rayat Mayuresh Eknath	3	4	4	3	3	3
29	29	Sapat Suraj Vijay	3	4	4	3	3	3
30	30	Sathe Imran Iqbal	3	4	4	3	3	3
31	31	Tayade Ganesh Vasant	3	4	4	3	3	3
32	32	Thakare Shivam Tanaji	3	4	4	3	3	3
33	33	Thakare Vilas Ashok	3	4	4	3	3	3
34	34	Mahale Hemlata Raghunath	3	4	4	3	3	3
Total appeared students (B)			10	10	10	10	10	10
No. of students obtaining more than 50% marks (A)			10	8	9	8	10	10
% of studnts successfully attained CO = (A/B)*100			100	80	90	80	100	100
AL = % age No. of students achieving target			AL AL 2: AL 3:	3	2	3	3	3
1: 50 – 70 %								
70 – 80%								
80 – 90%								

Course Outcome	CO attainment
C01	100
C02	80
C03	90
C04	80
C05	100
C06	100

NOTE:	Attainment Level 1	50% to 70% students
	Attainment Level 2	70% to 80% students
	Attainment Level 3	80% to 100% students

Subject Incharge

Dept. Academic Coordinator

HOD

Department of Mechanical Engineering
Academic Year: 2023-24 **Semester -VII**

CO Attainment
Class: BE **Subject: DMS LAB** **Subject Teacher: Prof. Rupali Gaikwad**

Attainment of Course Outcome through University Examination (Semester End Exam_SEE) PR/OR EXAM

Sr. No.	Roll No.	Name	External Practical/ Oral	
			Maximum Marks	Marks obtained
1	1	Adhikari Yadnesh Sunil	25	16
2	2	Bhoir Viresh Suresh	25	22
3	3	Bhovare Sahil Santosh	25	17
4	4	Dalvi Sameer Krushna	25	21
5	5	Dalvi Nitin Pandharinath	25	20
6	6	Dhodade Ishvar Shantaram	25	19
7	7	Gajakosh Vicky Anil	25	18
8	8	Gharat Ashish Subhash	25	18
9	9	Gharat Manish Vishwanath	25	19
10	10	Gharat Ruchit Chandrakant	25	17
11	11	Jadhav Harshad Sitaram	25	23
12	12	Jadhav Mrunali Vilas	25	16
13	13	Jadhav Shubham Sanjay	25	16
14	14	Jadhav Suraj Balu	25	18
15	15	Mope Pratik Ashok	25	17
16	16	More Kunal Ravindra	25	18
17	17	Muknak Suraj Subhash	25	18
18	18	Pargaonkar Saksham Madhukar	25	19
19	19	Patare Tejas Dattatray	25	18
20	20	Patil Abhijit Vitthal	25	16
21	21	Patil Bhavik Sudhakar	25	17
22	22	Patil Nirag Rajendra	25	22
23	23	Patil Sanket Vijay	25	23
24	24	Patil Tejas Dilip	25	16
25	25	Patil Vinit Mohan	25	15
26	26	Pawar Chaitali Krushna	25	16
27	27	Prajapati Vijay Kumar Karmnath	25	17
28	28	Rayat Mayuresh Eknath	25	18
29	29	Sapat Suraj Vijay	25	17
30	30	Sathe Imran Iqbal	25	17
31	31	Tayade Ganesh Vasant	25	17
32	32	Thakare Shivam Tanaji	25	16
33	33	Thakare Vilas Ashok	25	19
34	34	Mahale Hemlata Raghunath	25	20
Average Mark				18.12

Course Outcome	CO attainment(%)
C01	100
C02	100
C03	100
C04	100
C05	100
C06	100

Total appeared students (B)	34
No. of students obtaining more than average marks of class (A)	34
% CO attainment = (A/B) X 100	100
AL = % age No. of students achieving target	3

NOTE:	Attainment Level 1	50% to 70% students scoring more than 50% marks out of the relevant maximum marks
	Attainment Level 2	70 to 80% students scoring more than 50% marks out of the relevant maximum marks
	Attainment Level 3	80 to 100 % students scoring more than 50% marks out of the relevant maximum marks

Subject Incharge

Dept. Academic Coordinator

HOD



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ATMA MALIK INSTITUTE OF TECHNOLOGY & RESEARCH
Department of Mechanical Engineering

Course name- DMS LAB

Academic Year-2022-23

SEM- VII

Subject Teacher: Prof. Rupali Gaikwad

Course Code.CO	DIRECT		Course Exit survey	AVG(y)	CIE (a) [0.8x+0.2y]	Level	SEE_PR(b)	CO Attainment [0.6a+0.4b]	Level
	LAB	AVG(x)							
MEL701.1	94	94	100	100	95.2	3	100	97.12	2.9
MEL701.2	94	94	80	80	91.2	3	100	94.72	2.8
MEL701.3	94	94	90	90	93.2	3	100	95.92	2.9
MEL701.4	94	94	80	80	91.2	3	100	94.72	2.8
MEL701.5	94	94	100	100	95.2	3	100	97.12	2.9
MEL701.6	94	94	100	100	95.2	3	100	97.12	2.9

NOTE:	Attainment Level 1	50% to 70% students scoring more than 50% marks out of the relevant maximum marks
	Attainment Level 2	70 to 80% students scoring more than 50% marks out of the relevant maximum marks
	Attainment Level 3	80 to 100 % students scoring more than 50% marks out of the relevant maximum marks

Subject Incharge

Dept. Academic Coordinator

HOD



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Atma Malik Institute of Technology & Research
Department of Mechanical Engineering

Academic Year-2022-23

Course name- Design of Mechanical System

Class- BE MECH

SEM- VII

SEM- VII

Course	CO	ALCO	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO-1		PSO-2	
			Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)	Map (y)	Attn (x)
DMS (MEDLO7041)	1	2.9	3	2.9	1	1.0	1	1.0			2	1.9							1	1.0			1	1.0	1	1.0				
	2	2.8	2	1.9	1	0.9	2	1.9			2	1.9																		
	3	2.9	2	1.9	2	1.9	2	1.9			2	1.9	1	1.0					1	1.0			2	1.9	1	1.0	2	1.9		
	4	2.8	2	1.9	2	1.9	2	1.9			2	1.9	1	0.9	1	0.9	1	0.9					2	1.9	1	0.9	1	0.9	2	1.9
	5	2.9	2	1.9	3	2.9	3	2.9	3	2.9	2	1.9	3	2.9	3	2.9			1	1.0	1	1.0	1	1.0	1	1.0	1	1.0	1	1.0
	6	2.9	3	2.9	2	1.9	3	2.9	2	1.9	2	1.9	2	1.9	2	1.9	1	1.0	2	1.9	2	1.9			3	2.9	2	1.9		
Average			2.3333	2.2	1.8333	1.8	2.1667	2.1	2.5	2.4	2.0	1.9	1.8	1.7	1.5	1.4	1.0	1.0	1.2	1.2	1.5	1.5	1.4	1.0	1.0	1.5	1.4	1.6	1.5	
Attainment of POi (z) = (Avg. x /Avg.y) X 3			2.9		2.9		2.9		2.9		2.9		2.9		2.9		2.9		2.9		2.9		2.9		2.9		2.9		2.9	

$$Attn = \left(\frac{ALCO}{3} \right) \times Map$$

Subject Incharge

Dept. Academic Coordinator

HOD

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ACAD-DI-13 Rev : 00 Date: 11-7-2022	Course Plan	Academic Year: 2023-24 Semester: ODD
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Name of the staff : Swati S. Bhoir
Subject with code : Internet Programming (CSDLO5012)
Course : Computer
Semester/Branch : V
Academic Year : 2023-2024
Prerequisites : Data Structures, Programming Languages- JAVA, Python.
Objectives :

1. To get familiar with the basics of Internet Programming.
2. To acquire knowledge and skills for creation of web site considering both client and server-side programming.
3. To gain ability to develop responsive web applications and explore different web extensions and web services standards.
4. To learn characteristics of RIA and React Js.

Outcomes :

1. Implement interactive web page(s) using HTML and CSS.
2. Design a responsive web site using JavaScript and demonstrate database connectivity using JDBC
3. Demonstrate Rich Internet Application using Ajax and demonstrate and differentiate various Web Extensions
4. Demonstrate web application using Reactive Js



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Department of Computer Engineering

O mapping with course outcomes

PO	Description	CO 1	CO 2	CO 3	CO 4	CO 5	CO 6
PO1	Engineering knowledge						
PO2	Problem analysis						
PO3	Design/development of solutions						
PO4	Conduct investigations of complex problems						
PO5	Modern tool usage						
PO6	The engineer and society						
PO7	Environment and sustainability						
PO8	Ethics						
PO9	Individual and team work						
PO10	Communication						
PO11	Project management and finance						
PO12	Life-long learning						

TEXT BOOKS: 1. Ralph Moseley, M.T. Savliya, "Developing Web Applications", Willy India, Second Edition
2. "Web Technology Black Book", Dreamtech Press, First Edition, 978-7722-997
3. Robin Nixon, "Learning PHP, MySQL, JavaScript, CSS & HTML5" Third Edition, O'REILLY, 2014.
4. Dana Moore, Raymond Budd, Edward Benson, Professional Rich Internet Applications: AJAX and Beyond Wiley publications.

REFERENCE BOOKS: 1. Thomas A Powell, Fritz Schneider, JavaScript: The Complete Reference, Third Edition, Tata McGraw
2. David Flanagan, JavaScript: The Definitive Guide, Sixth Edition, O'Reilly Media, 2011 5
Steven Holzner The Complete Reference - PHP, Tata McGraw Hill, 2008
3. Mike Mcgrath—PHP & MySQL in Easy Steps, Tata McGraw Hill, 2012.



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Lesson Plan:

Sr. No.	Module/Chapter Name	Lecture No.	Topic Planned	Planned Date	Conducted Date	Delivery Method	CO Mapped	Remarks
1	Introduction to Web Technology	1	Clients, Servers and Communication, The Internet, Basic Internet protocols, World wide web	11/7/23	11/7/23	Chalk and Black Board, Smart Board	CO1	
		2	HTTP Request Message, HTTP Response Message, Web Clients, Web Servers	12/7/23	12/7/23			
		3	HTML5 fundamental syntax and semantics	14/7/23	13/7/23			
		4	HTML5-Tables, Lists, Image, HTML5 control elements	18/7/23	13/7/23			
		5	HTML5 elements, Drag and Drop, Audio – Video controls	19/7/23	14/7/23			
		6	CSS3 – Inline, embedded and external style sheets – Rule cascading, Inheritance	21/7/23	17/7/23			
		7	Background, Border Images, Colors, Shadows	25/7/23	17/7/23			
		8	Text, Transformations, Transitions,	26/7/23	19/7/23			
		9	Animation, Basics of Bootstrap	28/7/23	26/7/23			
	Front End Development	10	Java Script: An introduction to JavaScript	1/8/23	2/8/23	Chalk and Black Board, Smart Board	CO2	
		11	–JavaScript DOM Model-Date	2/8/23	3/8/23			
		12	Objects-Regular Expressions	4/8/23	3/8/23			
		13	Exception Handling, DHTML with	8/8/23	4/8/23			
		14	Validation-Built-in objects-Event Handling	9/8/23	9/8/23			
		15	JavaScriptJSON introduction – Syntax	11/8/23	17/8/23			



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Department of Computer Engineering

3	Back End Development	16	JSON Function Files – Http Request –SQL	18/8/23	18/8/23	Chalk and Black Board, Smart Board	CO3	
		17	Java Servlet Architecture, Servlet Life Cycle	22/8/23	21/8/23			
		18	Form GET and POST actions	23/8/23	23/8/23			
		19	Session Handling, Understanding Cookies	25/8/23	24/8/23			
		20	Installing and Configuring Apache Tomcat Web Server	29/8/23	25/8/23			
		21	Database Connectivity: JDBC perspectives, JDBC program example	30/8/23	31/8/23			
		22	JSP: Understanding Java Server Pages, JSP Standard Tag Library (JSTL),	1/9/23	1/9/23			
		23	Creating HTML forms by embedding JSP code	5/9/23	4/9/23			
4	Rich Internet Application (RIA)	24	Characteristics of RIA, AJAX design basics	6/9/23	4/9/23	Chalk and Black Board, Smart Board	CO4	
		25	AJAX vs Traditional Approach	8/9/23	8/9/23			
		26	Rich User Interface using Ajax,	12/9/23	11/9/23			
		27	jQuery framework with AJAX.	26/9/23	25/9/23			
5	Web Extension: PHP and XML	28	XML –DTD (Document Type Definition), XML Schema, Document Object Model,	21/9/23	25/9/23	Chalk and Black Board, Smart Board	CO5	
		29	Presenting XML, Using XML Parsers: DOM and SAX	29/9/23	29/9/23			
		30	XSL-eXtensible Stylesheet Language Introduction to PHP- Data types, control structures, built in functions	3/10/23	29/9/23			
		31	control structures, built in functions	4/10/23	9/10/23			2 hrs
		32	building web applications using PHP- tracking users	6/10/23	12/10/23			2 hrs



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	33	PHP and MySQL database connectivity with example	10/10/23	14/10/23			2 hours
React JS	34	Introduction to ReactJs	11/10/23	15/10/23	Chalk and Black Board, Smart Board	Co6	P
	35	React features	13/10/23	30/10/23			
	36	"Hello World" Application	17/10/23	24/10/23			
	38	introduction to JSX,	18/10/23	31/10/23			
	39	Simple Application using JSX	20/10/23	31/10/23			


Subject In charge

HOD

Vice-Principal



Principal



Innovative Teaching & Learning Methodology

A. Experiential Learning

- Mini Project/ Major Project/Model making
- Lab Based learning

B. Participatory Learning

- Flipped classroom
- Student Association
 - Technical Events ✓
 - Quiz online/offline
 - QnA session
- Use of Google Classroom & YouTube link
- Co-curricular/Extra-Curricular activity ✓
- Use of Virtual Lab

C. Problem Solving Methodologies

- Industry sponsored project
- Case study based project/Seminar
- Tutorial class
- Extension program
- Add On Course
- Assignment Based Learning ✓



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Department of Computer Engineering

COURSE INFORMATION SHEET

Course code: CSC604

Course title: Artificial Intelligence

Pre-requisite(s):

1. Discrete Mathematics, Data Structures
Co-requisite(s):

Credits: 3 L: 03 T: 00 P: 02

Class schedule per

week: 3 Class: Third

year

Semester: VI SEMESTER

Branch: Computer Engineering

Name of Teacher: Prof. Swati S. Bhoir

Course Objectives

The course is aimed

1.	To conceptualize the basic ideas and techniques underlying the design of intelligent systems
2.	To make students understand and Explore the mechanism of mind that enables intelligent thought and action
3.	To make students understand advanced representation formalism and search techniques
4.	To make students understand how to deal with uncertain and incomplete information

Course Outcomes

After successful completion of this course, students will be able to:

1.	Ability to develop a basic understanding of AI building blocks presented in intelligent agents
2.	Ability to choose an appropriate problem solving method and knowledge representation technique
3.	Ability to analyze the strength and weaknesses of AI approaches to knowledge- intensive problem solving.
4.	Ability to design models for reasoning with uncertainty as well as the use of unreliable information.
5.	Ability to design and develop AI applications in real world scenarios



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Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Progressive Evaluation Marks	20
End Examination Marks	80

Assessment Components	CO1	CO2	CO3	CO4	CO5
Progressive Evaluation Marks	✓	✓	✓	✓	✓
End Examination Marks	✓	✓	✓	✓	✓

Indirect Assessment –

1. Student feedback on teaching quality and teaching methods adopted
2. Student feedback on course syllabus and course outcome

CD	Course Delivery methods	Course Outcome	Course Delivery Method
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1-CO5	CD1, CD2, CD4, CD5, CD6, CD8
CD2	Tutorials/Assignments	CO1-CO5	CD1, CD2, CD4, CD8
CD3	Seminars		
CD4	Mini projects/Projects	CO1-CO5	CD1, CD2, CD4, CD5, CD6, CD8
CD5	Laboratory experiments/teaching aids	CO1-CO5	
CD6	Industrial/guest lectures	CO1-CO5	CD1, CD2, CD4, CD5, CD8
CD7	Industrial visits/in-plant training	-	-
CD8	Self- learning such as use of NPTEL materials and internets	CO1-CO6	CD1, CD2, CD4, CD5 CD8
CD9	Simulation		



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Department of Computer Engineering

ACAD-DI-38	List of CO-PO-PSO	Academic Year: 2024-25
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Subject Name –Artificial Intelligence

Date:06/01/2025

Semester – VI

Class / Scheme – TE COMP/ Rev 2019 (C scheme)

The following Program Outcomes (POs) and Program Specific Outcome (PSOs) statements are considered to setup correlation with individual Courses Outcomes (COs).

PO	Engineering Graduates will be able to:
PO1	Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization for the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, research literature, and analyze complex problems reaching substantiated conclusions using first principles of mathematics, and engineering sciences.
PO3	Design/development of solutions: Design solutions for complex engineering problems that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.
PO4	Conduct investigations of complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities, with an understanding of the limitations.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.



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Department of Computer Engineering

PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
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Program Specific Outcomes (PSOs): At the time of graduation students should be able to do

PSO	At the time of graduation students should be able to do;
PSO1	Model computational problems by applying mathematical concepts and design solutions using suitable data structures and algorithmic techniques.
PSO2	Design and develop computer programs/computer-based systems in the areas related to algorithms, operating system, artificial Intelligence, cloud computing, IoT and data analytics of varying problems.
PSO3	Familiarize with the modern trends in industrial/research settings and thereby inventive novel solutions to existing problems.

Course Outcomes: On Completion of this course, the successful students should be able to:

SUBJECT: Artificial Intelligence (CSC604)

CO	Statement
CO1	Ability to develop a basic understanding of AI building blocks presented in intelligent agents.
CO2	Ability to choose an appropriate problem solving method and knowledge representation technique
CO3	Ability to analyze the strength and weaknesses of AI approaches to knowledge- intensive problem solving
CO4	Ability to design models for reasoning with uncertainty as well as the use of unreliable information
CO5	Ability to design and develop AI applications in real world scenarios

SUBJECT: Artificial Intelligence Lab (CSL604)

CO	Statement
CO1	Identify languages and technologies for Artificial Intelligence
CO2	Understand and implement uninformed and informed searching techniques for real world problems.
CO3	Create a knowledge base using any AI language.
CO4	Design and implement expert systems for real world problems.

Subject In charge

Dept. Academic Coordinator

HOD





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Department of Computer Engineering

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2024-25
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Date:06/01/2025

Subject Name – Artificial Intelligence

Semester – VI

Class / Scheme – TE COMP/ Rev 2019 (C scheme)

Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

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	PSO 1	PSO 2	PSO 3
CO1	2						2		3	3		2		3	3
CO2	2	3	3										2	3	
CO3	2	3	2	2	2								1	3	2
CO4	2	2	3	2	2	2							1	3	1
CO5	2	2	3	2	2	2							1	3	1

Subject In-Charge

Dept. Academic Coordinator

HOD





Dr. Sadika Malik Atma II
A. S. Sw. (Dr.) Singh Mahanagar Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2024-25
Rev: 00		Semester: EVEN
Date: 11-7-2022		

Date:06/01/2025

Subject Name – Artificial Intelligence Lab

Semester – VI

Class / Scheme – TE COMP/ Rev 2019 (C scheme)

Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below:

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	PSO 1	PSO 2	PSO 3
CO1	3	1	3		3				3	3	2	3		3	3
CO2	3	3	3	1	3		1		3	3	2	3	2	3	3
CO3	3	1	3		3		2	1	3	3	3	3		3	3
CO4	3	2	3	1	3	1	3	1	3	3	3	3	2	3	3


Subject In-Charge

Dept. Academic Coordinator

HOD





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Department of Computer Engineering

ACAD-DI-38	List of CO-PO-PSO	Academic Year: 2022-23
Rev : 00		Semester: ODD
Date: 11-7-2022		

Date:

Subject Name –Computer Graphics

Semester – III

Class / Scheme – SE COMP/ Rev 2019 (C scheme)

The following Program Outcomes (POs) and Program Specific Outcome (PSOs) statements are considered to setup correlation with individual Courses Outcomes (COs).

1	Engineering Graduates will be able to:
1	Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization for the solution of complex engineering problems.
2	Problem Analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.
4	Conduct investigations of complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions
5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities, with an understanding of the limitations.
6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
10	Communication: Communicate effectively on complex engineering activities with the engineering community and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.



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PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

At the time of graduation students should be able to do;

PSO	At the time of graduation students should be able to do;
PSO 1	Model computational problems by applying mathematical concepts and design solutions using suitable data structures and algorithmic techniques.
PSO 2	Design and develop computer programs/computer-based systems in the areas related to algorithms, operating system, artificial Intelligence, cloud computing, IoT and data analytics of varying problems.
PSO 3	Familiarize with the modern trends in industrial/research settings and thereby inventive novel solutions to existing problems.

Course Outcomes: On Completion of this course, the successful students should be able to:

SUBJECT: Computer Graphics (CSC305)

CO	Statement
CO1	Describe the basic concepts of Computer Graphics.
CO2	Demonstrate various algorithms for basic graphics primitives
CO3	Apply 2-D geometric transformations on graphical objects.
CO4	Use various Clipping algorithms on graphical objects
CO5	Explore 3-D geometric transformations, curve representation techniques and projections methods.
CO6	Explain visible surface detection techniques and Animation.

SUBJECT: Computer Graphics Lab (CSL303)

CO	Statement
CO1	Implement various output and filled area primitive algorithms
CO2	Apply transformation, projection and clipping algorithms on graphical objects
CO3	Perform curve and fractal generation methods.
CO4	Develop a Graphical application/Animation based on learned concept

Subject In charge

Dept. Academic Coordinator

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ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		

Date:

NOTE – CO-PO-PSO mapping may vary as per Subject Requirement.

Subject Name – Computer graphics Lab

Semester – III

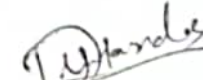
Class / Scheme – SE COMP/ Rev 2019 (C scheme)

Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

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	PSO 1	PSO 2	PSO 3
CO1	2	1							1	1	1		3	2	
CO2	2	2	2		3				1	2	2	2	3	2	3
CO3	1	1							1	1			1		
CO4	2	1	1		3				1	2	3	3	2	1	3


Subject in charge


Dept. Academic Coord


HOD



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Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		

Date:

Subject Name – Computer Graphics

Semester – III

Class / Scheme – SE COMP/ Rev 2019 (C scheme)

Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

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	PSO 1	PSO 2	PSO 3
CO 1	2	2	3									1		1	
CO 2	2	3	3		2							1	1	2	
CO 3	2	3	3	1							1	1			
CO 4	2	3	3	1	2							1	2	2	
CO 5	2	3	3		2						2	1			1
CO 6	2	3	3		2							1	2	2	1


Subject In-Charge


Dept. Academic Coordinator


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Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-13	Course Plan	Academic Year: 2024-25
Rev : 00		Semester: ODD
Date: 11-7-2022		

Name of the staff : Prof. Swati S. Bhoir

Subject with Course code : CSC305

Semester/Branch : III/Computer

Academic Year : 2024-25

Prerequisites : Knowledge of C Programming and Basic Mathematics.

Objectives

1. To equip students with the fundamental knowledge and basic technical competence in the field of Computer Graphics.
2. To emphasize on implementation aspect of Computer Graphics Algorithms.
3. To prepare the student for advance areas and professional avenues in the field of Computer Graphics

Outcomes : On successful completion of course, learner will be able to

1. Describe the basic concepts of Computer Graphics.
2. Demonstrate various algorithms for basic graphics primitives.
3. Apply 2-D geometric transformations on graphical objects.
4. Use various Clipping algorithms on graphical objects
5. Explore 3-D geometric transformations, curve representation techniques and projections methods.
6. Explain visible surface detection techniques and Animation.



Vishwatmak Jangli Maharaj Ashram Trust's
ATMA MALIK INSTITUTE OF TECHNOLOGY & RESEARCH

Department of Computer Engineering

Academic Year-2023-24

Subject- CG

Class- SE COMP

SEM- III

Roll No.	Name of student	Total Marks out of 20	Internal Assessment I- 2 Marks & 4 Marks				
			Q. 1			Q.2	
			A(5)	B(5)	C(5)	A(10)	B(5)
			CO1	CO2	CO1	CO2	CO2
1	PAL SARVESH SARVAJEET	16	4		2	10	
2	DHAWALE HEENA HEMANT	14	2	2		10	
3	PATIL SAHIL HEMANT	12	4		3	9	
4	GADHE VIVEK VIJAY	17	5		3	10	
5	KADAM ROSHAN DILIP	11			2		4
6	SUJAL DAYANAND BHOIR	8	2				
7	HANWATE ROHIT GYANUJI	15	3		3	3	
8	THAKUR SANIA KRISHNANANDAN	14	4		3	9	3
9	DALVI KHUSHI RAJESHAPPA	6	3		3	7	
10	HANWATE VAIBHAV KETUL	9	2		3	0	
11	GHODVINDE YUVRAJ RAVINDRA	13	5		3	2	4
12	GANVIR SUHANI SHAMRAO	5	1		3	5	
13	SAPKAL HARISH KRISHINA	19	4		3		1
14	ADITYA SUNIL BANGAR	15	4		5	10	
15	YADAV NIKHIL AJAYKUMAR	3	2	0	5	6	
16	PATOLE HITESH PUNDLIK	15	5		0	1	
17	TOPALE BHUSHAN PRAKASH				4		6
18	CHAURE KALPANA BALASAHEB	12	1	2			
19	THAKARE SIDDHI PRADIP	15	5		3	7	
20	VISHE KAUSTUBH NARENDRA	13	5		3	7	
21	CHAUDHARI VIVEK KESHAV	14	5		3	0	5
22	DUBELE NAUKITA NAMDEV				2	7	

Course Outcome	CO attainment(%)
CO1	91
CO2	68

No. of students attempted the question		No. of students above threshold		Attainment %	
23	NERKAR HARSHALI HEMRAJ	15	5	3	7
24	BANGAR HITESH PRABHAKAR	16	5	3	8
25	CHAVHAN YADNESH SUDAM				
26	DAVID KUMAR	10	5	3	2
27	MACHHIINDRANATH	6	5	1	
28	ROHAN GULAB RAMOLE	12	5	3	1
29	MHASDE PRAJOLI PRALHAD	18	5	3	10
30	DESHMUKH ROSHAN GHANSHYAM	13	5	4	4
31	BHOIR PRIYANKA PANDURANG	13	3	4	4
32	POUL HARSHAL ARVIND	12	1	3	8
		28	3	28	25
		25	2	26	18
		89	67	93	72
					67

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ATMA MALIK INSTITUTE OF TECHNOLOGY & RESEARCH
Department of Computer Engineering

Academic Year-2023-24

Subject- CG

Class- SE COMP

SEM- III

Internal Assessment- 2 Marks

Roll No.	Name of student	Total Marks out of 20	Q. 1			Q.2		
			A(5)	B(5)	C(5)	A(5)	B(5)	C(5)
			CO3	CO3	CO5	CO4	CO5	CO6
1	Bangar Aditya Sunil	12	4	4		4		
2	Bangar Hitesh Prabhakar	10		4	4	2		
3	Bhangare Tejas Machhindranath	8	3			2	3	
4	Bhoir Priyanka Pandurang	11	4	4		3		
5	Chaudhari Vivek Keshav	12	3		4	3	4	
6	Chavan Yadnesh Sudam	10	4			3	3	
7	Dalvi Khushi Rajeshappa	15	5	5		5		
8	David Kumar	11	4		4		3	
9	Deshmukh Roshan Ghanshyam	9		5		4		
10	Dhawale Heena Hemant	12	4	5		3		
11	Dubele Naukita Namdev	13	3	5		5		



12	Gadhe Vivek Vijay	13	3	5		2		3
13	Ganvir Suhani Shamrao	10	5	5				
14	Ghodvinde Yuvraj Ravindra	14	5	5			4	
15	Hanwate Rohit Gyanuji	10	4	2		4		
16	Hanwate Vaibhav Ketul	12	4	1		4	3	
17	Kadam Roshan Dilip	9	3	1		3	2	
18	Mhasade Prajoli Pralhada	19	5	5		5	4	
19	Nerkar Harshiali Hemraj	12	3	5		4		
20	Padala Rishi Venkatrajam	12	4	5		3		
21	Pal Sarvesh Sarvajeet	12	3	3		4	3	
22	Patil Sahil Hemant	12		5	5	2		
23	Patil Sarang Sahebrao	13		5	5	3		
24	Patole Hitesh Pundlik	9	3	4		2		
25	Poul Harshal Arvind	12	3	5			4	
26	Ramole Rohan Gulab	10		3	4			3
27	Sakpal Harish Krishna	11	3	5				3
28	Thakare Siddhi Pradip	9	3		3	2	1	
29	Thakur Sania Krishnananda	17	5	5		2	5	

30	Topale Bhushan Prakash	10	5	5			
31	Vishe Kaustubh Narendra	10	5	3		2	
32	Yadav Nikhil Ajaykumar	10	5	3		2	
33	Ubale Sakshi Rajesh	10	5			5	
34	Pagar Sayali Sahebrao	15	4	3		2	5
35	Pawar Sapana Navnath	12	2	3		3	4
36	Kokate Samruddhi Gorakh	8	4	2		2	
37	Jadhav Rutuja Ganesh	11	5	2		4	
38	Pawar Abhinay Dwarkanayth	10	4	1		5	
39	Sawakhande Gayatri Raju	11	3	3		5	
40	Bhoir Pranay Ramesh	8	4			4	
41	Kadbhane Aasavari Santosh	13	3	4	2	3	3
42	Pawar Vaishnavi Sujay	11	3	3		2	3
43	Tiwari Ketan Mohanprasad						
44	Bagul Gauravi Jitendra	11	3	4		4	
45	Gore Pooja Sunil	9		3		3	3
46	Thombare Shubham Motilal	8	4			4	
47	Sambare Rasika Pratit	11	4	5		2	

48	Jadhav Mansi Rajendra	10	3			4		
49	Bhusare Pratiksha Balasaheb	9	3			5	1	
50	Bhalerao Prem Siddharth	11	3			4	4	
51	Tilgulkar Vaishnavi Sudhir	13	3	4		3	3	
52								
No. of students attempted the question			44	39	9	43	19	4
No. of students above threshold			44	36	9	43	17	4
Attainment %			100	92	100	100	89	100

Course Outcome	CO attainment(%)
CO3	96
CO4	100
CO5	95
CO6	100



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Department of Computer Engineering

ACAD-DI-13	Course Plan	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		

Name of the staff : Prof. Swati S. Bhoir

Subject with Course code : CSC305 / Computer Graphics

Semester/Branch : III/Computer

Academic Year : 2023-24

Prerequisites : Knowledge of C Programming and Basic Mathematics.

Objectives :

1. To equip students with the fundamental knowledge and basic technical competence in the field of Computer Graphics.
2. To emphasize on implementation aspect of Computer Graphics Algorithms.
3. To prepare the student for advance areas and professional avenues in the field of Computer Graphics

Outcomes :

On successful completion of course, learner will be able to

1. Describe the basic concepts of Computer Graphics.
2. Demonstrate various algorithms for basic graphics primitives
3. Apply 2-D geometric transformations on graphical objects.
4. Use various Clipping algorithms on graphical objects
5. Explore 3-D geometric transformations, curve representation techniques and projections methods.
6. Explain visible surface detection techniques and Animation.



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Department of Computer Engineering

PO mapping with course outcomes

36 Lectures

PO	Description	CO 1	CO 2	CO 3	CO 4	CO 5	CO 6
PO1	Engineering knowledge						
PO2	Problem analysis						
PO3	Design/development of solutions						
PO4	Conduct investigations of complex problems						
PO5	Modern tool usage						
PO6	The engineer and society						
PO7	Environment and sustainability						
PO8	Ethics						
PO9	Individual and team work						
PO10	Communication						
PO11	Project management and finance						
PO12	Life-long learning						

TEXT BOOKS: 1. Hearn & Baker, "Computer Graphics C version", 2nd Edition, Pearson Publication.
2. James D. Foley, Andries van Dam, Steven K Feiner, John F. Hughes, "Computer Graphics Principles and Practice in C", 2nd Edition, Pearson Publication.
3. Samit Bhattacharya, "Computer Graphics", Oxford Publication.

REFERENCE BOOKS: 1. D. Rogers, "Procedural Elements for Computer Graphics", Tata McGraw- Hill Publications.
2. Zhigang Xiang, Roy Plastock, "Computer Graphics", Schaum's Outlines McGraw-Hill Education
3. Rajesh K. Maurya, "Computer Graphics", Wiley India Publication. 4. F. S. Hill, "Computer Graphics using OpenGL", Third edition, Pearson Publications.



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Department of Computer Engineering

Lesson Plan:

Sr. No.	Module/Chapter Name	Lecture No.	Topic Planned	Planned Date	Conducted Date	Delivery Method	CO Mapped	Remark
1	Introduction and Overview of Graphics System	1	Definition and Representative uses of computer graphics, Overview of coordinate system, Def of scan conversion, rasterization and rendering.	17/7/23	17/7/23	Chalk and Board, Smart board, PPT	CO1	
		2	Raster scan & random scan displays, Architecture of raster graphics system with display processor, Architecture of random scan systems	18/7/23	24/7/23			
2	Output Primitives	3	DDA algorithm and for line drawing	21/7/23	25/7/23	Chalk and Board, Smart board, PPT	CO 2	
		4	Bresenham's algorithm for line drawing	24/7/23	31/7/23			2 hours
		5	midpoint algorithm for circle,	25/7/23	1/8/23			2 hours
		6	midpoint algorithm for ellipse drawing	28/7/23	3/8/23			
		7	Aliasing, Antialiasing techniques like Pre and post filtering.	31/7/23	7/8/23			
		8	super sampling, and pixel phasing	1/8/23	7/8/23			
		9	Scan line Polygon Fill algorithm	4/8/23	8/8/23			



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3	Two Dimensional Geometric Transformations	10	inside outside tests,	7/8/23	9/8/23	Chalk and Board, Smart board, PPT	CO 3	TT. work 14/8/23
		11	Boundary Fill and Flood fill algorithm.	8/8/23	9/8/23			
		12	Basic transformations: Translation, Scaling,	11/8/23	14/8/23			
		13	Rotation	14/8/23	16/8/23			
		14	Matrix representation and Homogeneous Coordinates	18/8/23	18/8/23			
		15	Composite transformation	21/8/23	21/8/23			
		16	Other transformations: Reflection	22/8/23	23/8/23			
		17	Shear	25/8/23	29/8/23			
4	Two-Dimensional Viewing and Clipping	18	Viewing transformation pipeline	28/8/23	1/9/23	Chalk and Board, Smart board, PPT	CO 4	TT work 21/8/23
		19	Window to Viewport coordinate transformation	29/8/23	4/9/23			
		20	Cohen-Sutherland line clipping	1/9/23	4/9/23			
		21	Liang: Barsky line clipping	4/9/23	8/9/23			
		22	Sutherland-Hodgeman,	5/9/23	26/9/23			
		23	Weiler-Atherton.	8/9/23	26/9/23			
		24	3D Transformations: Translation	11/9/23	27/9/23			
25	Rotation, Scaling and Reflection	12/9/23	4/10/23					
26	Rotation about an arbitrary axis	25/9/23	5/10/23					
27	Projections – Parallel, Perspective	26/9/23	6/10/23					

13/9/23 - 15/9/23 ⇒ IA-I



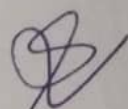
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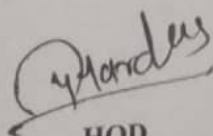
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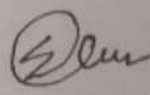
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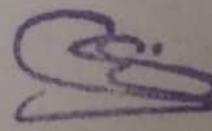
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6	Visible Surface Detection and Animation	28	Bezier Curve	29/9/23	9/10/23			
		29	B-Spline Curve	8/10/23	11/10/23			
		30	Fractal-Geometry:Fractal Dimension,	5/10/23	12/10/23			
		31	Koch Curve.	9/10/23	12/10/23			
		32	Classification of Visible Surface Detection algorithm, Back Surface detection method	10/10/23	16/10/23	Chalk and Board, Smart board, PPT	CO 6	Remedial
		33	Depth Buffer method, Area Subdivision method,	13/10/23	20/10/23			
		34	Introduction to Animation, Traditional Animation Techniques,	16/10/23	20/10/23			
		35	Principles of Animation,	17/10/23	30/10/23			
		36	Principles of Animation, Key framing: Character and Facial Animation	20/10/23	30/10/23			
		37	Deformation, Motion capture	23/10/23	31/10/23			


Subject In charge


HOD


Vice-Principal


Principal



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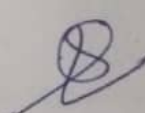
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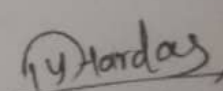
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Department of Computer Engineering

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		

Course Code: CSC305		Course Name: Computer Graphics			Semester: III		
Name of Faculty: Swati S. Bhoir					Batch: I		
Exp No.	Name of Experiment	Equipments/ Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remark
1	Implementation of DDA Line Drawing algorithm	Turbo C	2	26/7/23	26/7/23	21/8/23	
2	Implementation of Bresenham's Line algorithm	Turbo C	2	21/8/23	21/8/23	9/9/23	
3	Implementation of midpoint Circle algorithm.	Turbo C	2	9/8/23	9/8/23	16/8/23	
4	Implementation of midpoint Ellipse algorithm.	Turbo C	2	28/8/23	16/8/23	28/8/23	w.e.f. 14/8/23
5	Implementation of Area Filling Algorithm: Flood Fill.	Turbo C	2	6/9/23	28/8/23	4/9/23	w.e.f. 21/8/23
6	Implementation of Scan line Polygon Filling algorithm.	Turbo C	2	27/9/23	4/9/23	11/9/23	
7	Implementation of Bezier Curve.	Turbo C	2	4/10/23	11/9/23	25/9/23	
8	To Implement 2D Transformations: Translation and Scaling.	Turbo C	2	11/10/23	25/9/23	9/10/23	
9	To Implement 3D Transformations: Translation and Scaling.	Turbo C	2	18/10/23	9/10/23	16/10/23	
10	To Implement Liang Barsky Line Clipping Algorithm.	Turbo C	2	25/10/23	16/10/23	30/10/23	


Name & Signature of Subject Incharge


Name & Signature of HOD



ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		

Course Code: CSC305		Course Name: Computer Graphics			Semester: III		
Name of Faculty: Swati S. Bhoir					Batch: II		
Exp No.	Name of Experiment	Equipments/ Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remark
1	Implementation of DDA Line Drawing algorithm	Turbo C	2	17/7/23	24/7/23	31/7/23	
2	Implementation of Bresenham's Line algorithm	Turbo C	2	24/7/23	31/7/23	4/8/23	
3	Implementation of midpoint Circle algorithm.	Turbo C	2	7/8/23	4/8/23	14/8/23	
4	Implementation of midpoint Ellipse algorithm.	Turbo C	2	14/8/23	14/8/23	24/8/23	co-f. 14/8/23
5	Implementation of Area Filling Algorithm: Flood Fill.	Turbo C	2	21/8/23	24/8/23	14/9/23	co-f. 21/8/23
6	Implementation of Scan line Polygon Filling algorithm.	Turbo C	2	28/8/23	14/9/23	5/10/23	
7	Implementation of Bezier Curve.	Turbo C	2	4/9/23	5/10/23	12/10/23	
8	To Implement 2D Transformations: Translation and Scaling.	Turbo C	2	25/9/23	12/10/23	19/10/23	
9	To Implement 3D Transformations: Translation and Scaling.	Turbo C	2	9/10/23	19/10/23	30/10/23	
10	To Implement Liang Barsky Line Clipping Algorithm.	Turbo C	2	16/10/23	19/10/23	30/10/23	

Name & Signature of Subject Incharge

Name & Signature of HOD



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Atma Malik Institute of Technology & Research (AMRIT)

Department of Computer Engineering

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		

Course Code: CSC305		Course Name: Computer Graphics			Semester: III		
Name of Faculty: Swati S. Bhoir					Batch: III		
Exp. No.	Name of Experiment	Equipments/ Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remark
1	Implementation of DDA Line Drawing algorithm	Turbo C	2	23/8/23	23/8/23	23/8/23	w-e-f-14/8
2	Implementation of Bresenham's Line algorithm	Turbo C	2	23/8/23	23/8/23	6/9/23	
3	Implementation of midpoint Circle algorithm.	Turbo C	2	6/9/23	6/9/23	6/9/23	
4	Implementation of midpoint Ellipse algorithm.	Turbo C	2	6/9/23	6/9/23	27/9/23	
5	Implementation of Area Filling Algorithm: Flood Fill.	Turbo C	2	27/9/23	27/9/23	27/9/23	
6	Implementation of Scan line Polygon Filling algorithm.	Turbo C	2	27/9/23	27/9/23	4/10/23	
7	Implementation of Bezier Curve.	Turbo C	2	4/10/23	4/10/23	4/10/23	
8	To Implement 2D Transformations: Translation and Scaling.	Turbo C	2	11/10/23	4/10/23	11/10/23	
9	To Implement 3D Transformations: Translation and Scaling.	Turbo C	2	11/10/23	11/10/23	18/10/23	
10	To Implement Liang Barsky Line Clipping Algorithm.	Turbo C	2	18/10/23	18/10/23	30/10/23	

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Name & Signature of HOD





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Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-14 A

Rev : 00

Date: 11-7-2022

Practical / Lab Plan

Academic Year: 2023-24

Semester: EVEN

Course Code: CSL405

Course Name: Python
Programming

Semester: IV

Batch: B1

Name of Faculty: Prof. Swati Bhoir

Name of Experiment	Equipment / Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remark
Exploring basics of python like data types (strings, list, array, dictionaries, set, tuples) and control statements.	Python	2 Hrs.	12/1/2024	19/1/24	21/2/24	
Creating functions, classes and objects using python. Demonstrate exception handling and inheritance	Python	2 Hrs.	19/1/2024	21/2/24	30/2/24	
Exploring Files and directories a. Python program to append data to existing file and then display the entire file b. Python program to count number of lines, words and characters in a file. c. Python program to display file available in current directory	Python	2 Hrs.	2/2/2024	9/2/24	16/2/24	
Creating GUI with python containing widgets such as labels, textbox, radio, checkboxes and custom dialog boxes.	Python	2 Hrs.	9/2/2024	16/2/24	13/3/24	
Menu driven program for data structure using built in function for link list, stack and queue.	Python	2 Hrs.	16/2/2024	13/3/24	15/3/24	
Program to demonstrate CRUD (create, read, update and delete) operations on database (SQLite/ MySQL) using python	Python	2 Hrs.	23/2/2024	15/3/24	19/3/24	
Creation of simple socket for basic information exchange between server and client	Python	2 Hrs.	1/3/2024	19/3/24	22/3/24	
8 Programs on Threading using python.	Python	2 Hrs.	15/3/2024	22/3/24	29/3/24	
9 Exploring basics of NumPy Methods.	Python	2 Hrs.	22/3/2024	29/3/24	29/3/24	
10 Program to demonstrate use of NumPy: Array objects	Python	2 Hrs.	5/4/2024	29/3/24	5/4/24	
11 Program to demonstrate Data Series and Data Frames using Pandas.	Python	2 Hrs.	12/4/2024	5/4/24	12/4/24	
12 Program to send email and read content of URL.	Python	2 Hrs.	19/4/2024	12/4/24	19/4/24	
13 Project	Python	-	26/4/2024	19/4/24	19/4/24	

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Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-14 A

Rev : 00

Date: 11-7-2022

Practical / Lab Plan

Academic Year: 2023-24

Semester: EVEN

se Code:CSL405

Course Name: Python
Programming

Semester:IV

e of Faculty: Prof. Swati Bhoir

Batch:B2

Name of Experiment	Equipme nt / Software required	Plann ed Hrs.	Planned Date	Date of Perform ance	Date of Assess ment	Rema rk
Exploring basics of python like data types (strings, list, array, dictionaries, set, tuples) and control statements.	Python	2 Hrs.	17/1/2024	17/1/24	24/1/24	
Creating functions, classes and objects using python. Demonstrate exception handling and inheritance	Python	2 Hrs.	24/1/2024	24/1/24	31/1/24	
Exploring Files and directories a. Python program to append data to existing file and then display the entire file b. Python program to count number of lines, words and characters in a file. c. Python program to display file available in current directory	Python	2 Hrs.	31/1/2024	31/1/24	7/2/24	
Creating GUI with python containing widgets such as labels, textbox, radio, checkboxes and custom dialog boxes.	Python	2 Hrs.	7/2/2024	7/2/24	9/2/24	
Menu driven program for data structure using built in function for link list, stack and queue.	Python	2 Hrs.	14/2/2024	9/2/24	14/2/24	
Program to demonstrate CRUD (create, read, update and delete) operations on database (SQLite/ MySQL) using python	Python	2 Hrs.	21/2/2024	14/2/24	7/3/24	
Creation of simple socket for basic information exchange between server and client	Python	2 Hrs.	6/3/2024	7/3/24	13/3/24	
Programs on Threading using python.	Python	2 Hrs.	13/3/2024	13/3/24	19/3/24	
Exploring basics of NumPy Methods.	Python	2 Hrs.	20/3/2024	19/3/24	27/3/24	
Program to demonstrate use of NumPy: Array objects	Python	2 Hrs.	27/3/2024	27/3/24	3/4/24	
Program to demonstrate Data Series and Data Frames using Pandas.	Python	2 Hrs.	3/4/2024	3/4/24	3/4/24	
Program to send email and read content of URL.	Python	2 Hrs.	10/4/2024	3/4/24	19/4/24	
Project	Python	2 Hrs.	26/4/2024	19/4/24	19/4/24	

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Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

Academic Year: 2023-24

ACAD-DI-14 A

Rev : 00

Date: 11-7-2022

Practical / Lab Plan

Semester: EVEN

se Code:CSL405	Course Name: Python Programming			Semester:IV		
of Faculty: Prof. Swati Bhoir				Batch:B3		
Name of Experiment	Equipme nt / Software required	Plann ed Hrs.	Planned Date	Date of Perform ance	Date of Assess ment	Remarks
Exploring basics of python like data types (strings, list, array, dictionaries, set, tuples) and control statements.	Python	2 Hrs.	11/1/2024	19/1/24	25/1/24	
Creating functions, classes and objects using python. Demonstrate exception handling and inheritance	Python	2 Hrs.	18/1/2024	25/1/24	11/2/24	
Exploring Files and directories a. Python program to append data to existing file and then display the entire file b. Python program to count number of lines, words and characters in a file. c. Python program to display file available in current directory	Python	2 Hrs.	25/1/2024	11/2/24	8/2/24	
Creating GUI with python containing widgets such as labels, textbox, radio, checkboxes and custom dialog boxes.	Python	2 Hrs.	1/2/2024	8/2/24	15/2/24	
Menu driven program for data structure using built in function for link list, stack and queue.	Python	2 Hrs.	8/2/2024	15/2/24	13/3/24	
Program to demonstrate CRUD (create, read, update and delete) operations on database (SQLite/ MySQL) using python	Python	2 Hrs.	15/2/2024	13/3/24	19/3/24	
Creation of simple socket for basic information exchange between server and client	Python	2 Hrs.	22/2/2024	19/3/24	28/3/24	
Programs on Threading using python.	Python	2 Hrs.	29/2/2024	22/3/24	28/3/24	
Exploring basics of NumPy Methods.	Python	2 Hrs.	7/3/2024	28/3/24	28/3/24	
Program to demonstrate use of NumPy: Array objects	Python	2 Hrs.	14/3/2024	28/3/24	4/4/24	
Program to demonstrate Data Series and Data Frames using Pandas.	Python	2 Hrs.	21/3/2024	4/4/24	4/4/24	
Program to send email and read content of URL.	Python	2 Hrs.	28/3/2024	4/4/24	19/4/24	
Project	Python	2 Hrs.	4/4/2024	19/4/24	19/4/24	

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Atma Malik Institute of Technology & Research (AMRIT)

Department of Electronics and Telecommunication Engineering

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2022-23
Rev : 00		Semester: EVEN
Date: 11-7-2022		

se Code:ECL404	Course Name: Python Programming			Semester:IV		
e of Faculty: Prof. Swati Bhoir				Batch:B1		
Name of Experiment	Equipme nt / Software required	Plann ed Hrs.	Planned Date	Date of Perform ance	Date of Assess ment	Rema rk
Exploring basics of python like data types (strings, list, array, dictionaries, set, tuples) and control statements.	Python	2 Hrs.	11/1/23	18/1/23	18/1/23	
Creating functions, classes and objects using python. Demonstrate exception handling and inheritance	Python	2 Hrs.	18/1/23	25/1/23	25/1/23	
Exploring Files and directories a. Python program to append data to existing file and then display the entire file b. Python program to count number of lines, words and characters in a file. c. Python program to display files available in the current directory.	Python	2 Hrs.	25/1/23	10/2/23	10/2/23	
Creating GUI with python containing widgets such as labels, textbox, radio, checkboxes and custom dialog boxes.	Python	2 Hrs.	1/2/23	15/2/23	15/2/23	
Menu driven program for data structure using built in function for link list, stack and queue.	Python	2 Hrs.	8/2/23	22/2/23	22/2/23	
Program to demonstrate CRUD (create, read, update and delete) operations on database (SQLite/ MySQL) using python	Python	2 Hrs.	22/2/23	1/3/23	1/3/23	
Creation of simple socket for basic information exchange between server and client	Python	2 Hrs.	1/3/23	8/3/23	8/3/23	
Programs on Threading using python.	Python	2 Hrs.	8/3/23	8/3/23	8/3/23	
Exploring basics of NumPy Methods.	Python	2 Hrs.	15/3/23	29/3/23	29/3/23	
Program to demonstrate use of NumPy: Array objects	Python	2 Hrs.	29/3/23	29/3/23	29/3/23	
Program to demonstrate Data Series and Data Frames using Pandas.	Python	2 Hrs.	5/4/23	12/4/23	12/4/23	
Program to send email and read content of URL.	Python	2 Hrs.	12/4/23	12/4/23	12/4/23	
Project	Python	2 Hrs.	19/4/23	21/4/23	21/4/23	

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Atma Malik Institute of Technology & Research (AMRIT)

Department of Computer Engineering

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2022-23
Rev : 00		Semester: EVEN
Date: 11-7-2022		

e Code:CSL405	Course Name: Python Programming			Semester:IV		
of Faculty: Prof. Swati Bhoir				Batch:B1		
Name of Experiment	Equipment / Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remark
Exploring basics of python like data types (strings, list, array, dictionaries, set, tuples) and control statements.	Python	2 Hrs.	12/1	12/1	12/1	
Creating functions, classes and objects using python. Demonstrate exception handling and inheritance	Python	2 Hrs.	19/1	19/1	19/1	
Exploring Files and directories a. Python program to append data to existing file and then display the entire file b. Python program to count number of lines, words and characters in a file. c. Python program to display file available in current directory	Python	2 Hrs.	2/2	2/2	2/2	
Creating GUI with python containing widgets such as labels, textbox, radio, checkboxes and custom dialog boxes.	Python	2 Hrs.	9/2	2/2	2/2	
Menu driven program for data structure using built in function for link list, stack and queue.	Python	2 Hrs.	9/2	16/2	16/2	
Program to demonstrate CRUD (create, read, update and delete) operations on database (SQLite/ MySQL) using python	Python	2 Hrs.	16/2	16/2	16/2	
Creation of simple socket for basic information exchange between server and client	Python	2 Hrs.	23/2	23/2	23/2	
Programs on Threading using python.	Python	2 Hrs.	2/3	2/3	2/3	
Exploring basics of NumPy Methods.	Python	2 Hrs.	9/3	2/3	2/3	
Program to demonstrate use of NumPy: Array objects	Python	2 Hrs.	16/3	9/3	9/3	
Program to demonstrate Data Series and Data Frames using Pandas.	Python	2 Hrs.	23/3	30/3	30/3	
Program to send email and read content of URL.	Python	2 Hrs.	30/3	6/3	6/3	
Project	Python		6/4	13/3	13/3	


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Atma Malik Institute of Technology & Research (AMRIT)

Department of Computer Engineering

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2022-23
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Course Code:CSL405		Course Name: Python Programming			Semester:IV		
Name of Faculty: Prof. Swati Bhoir					Batch:B2		
Exp. No.	Name of Experiment	Equipment / Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remarks
1	Exploring basics of python like data types (strings, list, array, dictionaries, set, tuples) and control statements.	Python	2 Hrs.	16/1/23	23/1/23	23/1/23	
2	Creating functions, classes and objects using python. Demonstrate exception handling and inheritance	Python	2 Hrs.	23/1/23	30/1/23	30/1/23	
3	Exploring Files and directories a. Python program to append data to existing file and then display the entire file b. Python program to count number of lines, words and characters in a file. c. Python program to display file available in current directory	Python	2 Hrs.	30/1/23	6/2/23	6/2/23	
4	Creating GUI with python containing widgets such as labels, textbox, radio, checkboxes and custom dialog boxes.	Python	2 Hrs.	6/2/23	13/2/23	13/2/23	
5	Menu driven program for data structure using built in function for link list, stack and queue.	Python	2 Hrs.	13/2/23	20/2/23	20/2/23	
6	Program to demonstrate CRUD (create, read, update and delete) operations on database (SQLite/ MySQL) using python	Python	2 Hrs.	20/2/23	6/3/23	6/3/23	
7	Creation of simple socket for basic information exchange between server and client	Python	2 Hrs.	6/3/23	13/3/23	13/3/23	
8	Programs on Threading using python.	Python	2 Hrs.	13/3/23	13/3/23	13/3/23	
9	Exploring basics of NumPy Methods.	Python	2 Hrs.	13/3/23	27/3/23	27/3/23	
10	Program to demonstrate use of NumPy: Array objects	Python	2 Hrs.	27/3/23	3/4/23	3/4/23	
11	Program to demonstrate Data Series and Data Frames using Pandas.	Python	2 Hrs.	3/4/23	10/4/23	10/4/23	
12	Program to send email and read content of URL.	Python	2 Hrs.	10/4/23	10/4/23	10/4/23	
13	Project	Python	2 Hrs.	10/4/23	21/4/23	21/4/23	

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Atma Malik Institute of Technology & Research (AMRIT)
Department of Mechanical Engineering

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2022-23
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Course Code:CSC504			Course Name: Python Programming			Semester:IV		
Name of Faculty: Prof. Swati Bhoir						Batch:B1		
Exp. No.	Name of Experiment	Equipme nt / Software required	Plann ed Hrs.	Planned Date	Date of Perform ance	Date of Assess ment	Rema rk	
1	Introduction to python and its applications. Installation of Python and setting up a programming environment such as Anaconda and Spyder Python Basics: Variable and variable types, Booleans, Numbers (integers, floats, fractions, complex numbers), strings, lists, tuples, sets, dictionaries. bytes and byte arrays.	Python	2 Hrs.	12/1/2023	12/1/2023	19/1/2023	1	
2	Manipulating variables, indexing, slicing, basic operators (arithmetic, relational, logical, membership, identity). String methods, list methods, list slicing, set methods, in built python functions, input and output functions.	Python	2 Hrs.	19/1/2023	19/1/2023	30/1/2023	2	
3	Basic Coding in Python: If, else, elif statements, for loops, range function, while loops, List comprehensions, functions in python. Introduction to OOP, Classes, Objects, Reading and writing files.	Python	2 Hrs.	30/1/2023	30/1/2023	6/2/2023	2	
4	Python libraries: Installing of different libraries, packages or modules Basic concepts of the following libraries: NumPy, Matplotlib,	Python	2 Hrs.	6/2/2023	6/2/2023	13/2/2023	2	
5	Pandas, SciPy Optional libraries based on case studies in Module 4: Pillow, Scikit, OpenCV, Python in Raspberry Pi	Python	2 Hrs.	13/2/2023	13/2/2023	20/2/2023		
6	Case Studies using Python	Python	2 Hrs.	20/2/2023	20/2/2023	6/3/2023		
7	Case Studies using Python	Python	2 Hrs.	6/3/2023	6/3/2023	21/3/2023		
8	Case Studies using Python	Python	2 Hrs.	21/3/2023	21/3/2023	21/3/2023		

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Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year 2023-24
Rev. 00		Semester: Even
Date: 11-7-2022		

Date:

Subject Name – Artificial Intelligence

Semester – VI

Class / Scheme – TE COMP/ Rev 2019 (C scheme)

Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

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	PSO 1	PSO 2	PSO 3
CO 1	2						2		3	3		2		3	3
CO 2	2	3	3										2	3	
CO 3	2	3	2	2	2								1	3	2
CO 4	2	2	3	2	2	2							1	3	1
co5	2	2	3	2	2	2							1	3	1

Subject In-Charge

Dept. Academic Coordinator

HOD





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Department of Computer Engineering

ACAD-DI-39	CO-PO-PSO Mapping Sheet	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Date:

Subject Name –Artificial Intelligence Lab

Semester – VI

Class / Scheme – TE COMP/ Rev 2019 (C scheme)

Mapping between Course outcomes (COs) and the Program Outcomes (POs) and Program Specific outcomes (PSOs) is as in tables below;

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	PSO 1	PSO 2	PSO 3
CO 1	03														
CO 2	03														
CO 3	03														
CO 4	03														

Subject In-Charge

Dept. Academic Coordinator

HOD





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Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-13	Course Plan	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Name of the staff : Ms. Swati Bhoir

Subject with code : CSC604

Course : ARTIFICIAL INTELLIGENCE

Semester/Branch : VI/COMPUTER

Academic Year : 2023-2024

Prerequisites : Prerequisite: Discrete Mathematics, Data Structures

Objectives

- :
1. To conceptualize the basic ideas and techniques underlying the design of intelligent systems.
 2. To make students understand and explore the mechanism of mind that enables intelligent thought and action.
 3. To make students understand advanced representation formalism and search techniques.
 4. To make students understand how to deal with uncertain and incomplete information.

Outcomes

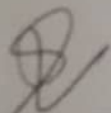
- : At the end of the course, the student will be able to
1. Ability to develop a basic understanding of AI building blocks presented in intelligent agents.
 2. Ability to choose an appropriate problem solving method and knowledge representation technique.
 3. Ability to analyze the strength and weaknesses of AI approaches to knowledge-intensive problem solving.
 4. Ability to design models for reasoning with uncertainty as well as the use of unreliable information.
 5. Ability to design and develop AI applications in real world scenarios.

Lesson Plan:

Sl. No	Module/Chapter Name	Lecture No.	Topic Planned	Planned Date	Conducted Date	Delivery Method	CO Mapped	Remark
1	Introduction to Artificial Intelligence	1	Introduction, History of Artificial Intelligence	8/1/2024	8/1/24	Chalk and Board/PP T's/Vide o	CO1	
		2	Intelligent Systems: Categorization of Intelligent System,	10/1/2024	10/1/24			
		3	Components of AI Program	12/1/24	12/1/24			
		4	Foundations of AI, Sub-areas of AI, Applications of AI, Current trends in AI.	15/1/24	17/1			holiday on 15/1/24 make a substitute
2	Intelligent Agents Exploration and Data Pre-processing	5	Agents and Environments, The concept of rationality, The nature of Environment	17/1/24	19/1	Chalk and Board/PP T's/Vide o	CO2	
		6	The structure of Agents, Types of Agents, Learning	19/1/24	23/1			
		7	Solving problem by Searching: Problem Solving Agent	22/1/24	25/1			holiday on monday
		8	Formulating Problems, Example Problems.	24/1/24	25/1			2 lectures
3	Problem solving	9	Uninformed Search Methods: Breadth First Search (BFS), Depth First	29/1/24	29/1	Chalk and Board/PP T's/Vide o/Smart board	CO2	
		10	Depth Limited Search, Depth First Iterative Deepening	31/1/24	31/1/24			Two lectures
		11	Informed Search Methods: Greedy best first Search	5/2/24	31/1/24			
		12	A* Search	7/2/24	2/2			Two lectures
		13	Memory bounded heuristic Search.	9/2/24	5/2			
		14	Local Search Algorithms and	12/2/24	5/2 4			

4	Knowledge and Reasoning		Optimization Problems: Hill climbing					
		15	Simulated annealing, Genetic algorithms.	14/12/24	8/12			
		16	Adversarial Search: Game Playing,	16/12/24	8/12			
		17	Min-Max Search	21/12/24	9/12/24			
		18	Alpha Beta Pruning	23/12/24	14/12	Chalk and Board/PP T's/Vide o/Smart board	CO2, CO4	
		19	Knowledge based Agents, Brief Overview of propositional logic	11/3/24	14/12			
		20	First Order Logic: Syntax and Semantic,	4/3/24	16/12			
		21	Inference in FOL	6/3/24	16/12			
		22	Forward chaining,	11/3/24	14/13			
		23	backward Chaining.	13/3	14/13			
		24	Knowledge Engineering in First-Order Logic	15/3	18/13			
		25	Unification	18/13	20/13			
		26	Resolution	20/13	20/13			
		27	Uncertain Knowledge and Reasoning: Uncertainty	22/13	22/13			
		28	Representing knowledge in an uncertain domain	27/13	22/13			
		29	The semantics of belief network	1/4	27/13			
		30	Simple Inference in belief network	3/14	28/13			
5	Planning and Learning	31	The planning problem, Planning with state space search, Partial order planning	5/14	29/13	Chalk and Board/PP T's/Vide o/Smart board	CO3	
		32	Hierarchical planning, Conditional Planning.	8/14	11/4			
		33	Learning: Forms of Learning, Theory of	10/14	11/4			

6	AI Applications		Learning, PAC learning					
		34	Introduction to statistical learning (Introduction only) Introduction to reinforcement learning: Learning from Rewards,	12/4	4/4			
		35	Passive Reinforcement Learning, Active reinforcement Learning	19/4	4/4			
		36	Introduction to NLP- Language models, Grammars, Parsing	19/4	8/4	Chalk and Board/PP T's/Video/Smart board	CO4	
		37	Robotics - Robots, Robot hardware	22/4	8/4			
		38	Problems Robotics can solve	26/4	12/4			
		39	AI applications in Healthcare, Retail, Banking	26/4	12/4			


Subject In-Charge

HOD



|| Sabka Malik Atma ||
Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Course Code:CSC604			Course Name: Artificial Intelligence			Semester: VI	
Name of Faculty: Prof. Swati Bhoir						Batch:B1	
Exp. No.	Name of Experiment	Equipment / Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remark
1	One case study on AI applications published in IEEE/ACM/Springer or any prominent journal.	Ms.Office	2 Hrs.	11/1/2024	12/1/24	25/1/24	
2	Assignments on State space formulation and PEAS representation for various AI applications.	Ms.Office	2 Hrs.	18/1/2024	25/1/24	1/2/24	half day
3	Write a Program on uninformed search methods (BFS).	Python	2 Hrs.	25/1/2024	1/2/24	8/2/24	
4	Write a Program on uninformed search methods (DFS).	Python	2 Hrs.	1/2/2024	8/2/24	15/2/24	
5	Write a Program on informed search methods (A*).	Python	2 Hrs.	8/2/2024	15/2/24	21/3/24	
6	Write a Program on Game playing algorithms (Min-Max/Alpha -beta Pruning).	Python	2 Hrs.	15/2/2024	21/3/24	28/3/24	
7	Write a case study on Planning with real time example.	Ms. Office	2 Hrs.	22/2/2024	28/3/24	2/4/24	
8	Write a program to implement Bayes network.	Python	2 Hrs.	29/2/2024	2/4/24	16/4/24	


Name & Signature of Subject In-charge



|| Sabka Malik Atma ||
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Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-14 A

Rev : 00

Date: 11-7-2022

Practical / Lab Plan

Academic Year: 2023-24

Semester: EVEN

Course Code: CSC604

Course Name: Artificial Intelligence

Semester: VI

Name of Faculty: Prof. Swati Bhoir

Batch: B2

Exp. No.	Name of Experiment	Equipment / Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remark
1	One case study on AI applications published in IEEE/ACM/Springer or any prominent journal.	Ms.Office	2 Hrs.	16/1/2024	16/1/24	30/1/24	
2	Assignments on State space formulation and PEAS representation for various AI applications.	Ms.Office	2 Hrs.	23/1/2024	30/1/24	30/1/24	
3	Write a Program on uninformed search methods (BFS).	Python	2 Hrs.	30/1/2024	30/1/24	6/2/24	
4	Write a Program on uninformed search methods (DFS).	Python	2 Hrs.	6/2/2024	6/2/24	13/2/24	
5	Write a Program on informed search methods (A*).	Python	2 Hrs.	13/2/2024	13/2/24	12/3/24	
6	Write a Program on Game playing algorithms (Min-Max/Alpha -beta Pruning).	Python	2 Hrs.	20/2/2024	12/3/24	21/3/24	
7	Write a case study on Planning with real time example.	Ms. Office	2 Hrs.	5/3/2024	21/3/24	28/3/24	
8	Write a program to implement Bayes network.	Python	2 Hrs.	12/3/2024	28/3/24	4/4/24	


Name & Signature of Subject In-charge



II Sabka Malik Atma II
Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev : 00		Semester: EVEN
Date: 11-7-2022		

Course Code: CSC604		Course Name: Artificial Intelligence			Semester: VI		
Name of Faculty: Prof. Swati Bhoir					Batch: B3		
Exp. No.	Name of Experiment	Equipment / Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remark
1	One case study on AI applications published in IEEE/ACM/Springer or any prominent journal.	Ms.Office	2 Hrs.	16/1/2024	16/1/24	23/1/24	
2	Assignments on State space formulation and PEAS representation for various AI applications.	Ms.Office	2 Hrs.	23/1/2024	23/1/24	30/1/24	
3	Write a Program on uninformed search methods (BFS).	Python	2 Hrs.	30/1/2024	30/1/24	6/2/24	
4	Write a Program on uninformed search methods (DFS).	Python	2 Hrs.	6/2/2024	6/2/24	13/2/24	
5	Write a Program on informed search methods (A*).	Python	2 Hrs.	13/2/2024	13/2/24	12/3/24	
6	Write a Program on Game playing algorithms (Min-Max/Alpha-beta Pruning).	Python	2 Hrs.	20/2/2024	12/3/24	28/3/24	Atma Malik Institute 2024
7	Write a case study on Planning with real time example.	Ms. Office	2 Hrs.	5/3/2024	28/3/24	2/4/24	
8	Write a program to implement Bayes network.	Python	2 Hrs.	12/3/2024	2/4/24	10/4/24	


Name & Signature of Subject In-charge



!! Sabka Malik Atma!!

Vishwatmak Jangli Maharaj Ashram Trust's

ATMA MALIK INSTITUTE OF TECHNOLOGY & RESEARCH

Department of Computer Engineering

Academic Year-2023-24

Class- BE COMP

Subject- NLP

SEM- VII

Internal Assessment I- 2 Marks & 4 Marks

Roll No.	Name of student	Total Marks out of 20	Q. 1			Q.2		
			A(5)	B(5)	C(5)	A(10)	B(5)	C(5)
			CO1	CO1	CO2	CO1	CO2	CO2
1	BAGUL VRUSHALI VILAS	11	3		2	4	2	2
2	BAGUL VRUTIKA VILAS	13	1		3	4	3	0
3	BHEEMBAI KAREPPA KAVALDAR	11	3		3	4		1
4	DHONE DHIRAJ VINOD	19	5		5	5	4	
5	BHOR AJAY SANDIP	11	3		3	3	2	
6	BHOSALE SANSKRUTI SHIVAJI	17	4	5		5	3	
7	BODAKE PRATIK SUBHASH	12	3		3	3		3
8	BODAKE SIDDHESH SUBHASH	12	4	3		3		2
9	BORSE LALIT DADAJI	11	4		1	3	3	
10	CHAVAN VRUSHABH RAJESH	AB						
11	DANGAL BHAGYASHRI DIPAK	15	5	5		3		2
12	DESALE SANI SANJAY	11	4	4		3		0
13	DOKFODE SUNIL KRISHNA							
14	GAYKWAD SHIVANI BHARAT	11	5	5		1		



15	GODSE RUCHITA SANJAY	13	3	2					1
16	GUNJAL DIVYA RAJENDRA	11	3		5		3	4	
17	ICHAKE RUSHIKESH PRAKASH	11	2					3	1
18	JADHAV BHAGYASHREE	12	4			4			2
19	JADHAV DEVYANI RAJENDRA	19	4	5			5	5	
20	JADHAV SANDIP MALHARI	8	4					2	2
21	JADHAV TRUPTI	8	3			2			3
22	JAWALE PRAKASHA VISHNU	10	5			3	1		
23	KAMBLE PRAKASHA	14	3			3	5		3
24	KANTODE PRATIK	12	5	2			3	2	
25	KATKADE PRAFULLA SUNIL	13	4	5			4		
26	KHAIRE PANKAJ PRADIP	13	3			4	5		1
27	KUMBHAR ANASH	13	5			3	4		1
28	MALEKAR AKSHAY SANJAY	9	1	0			5		3
29	MAHARKE PRITANNA	20	5	5			5	5	
30	PADWAL JAYDIP SHANTARAM	9		2		3	3		
31	PARDULE GAURAV GANESH	14	5			3	5		1
32	PATIL AKASH DATTA	10	1			3	5		1
33	PATIL SADICHA PRAMOD	14	4			4	5	1	
34	PATIL SUSHANT SANTOSH	16	5			4	5		2
35	PISE TRIVENI JAYA	15	5			2	5		3
36	RAUT JAGRUTI SHIVAJI	17	5			4		4	4
37	RUPERI VIJAYA SUNIL	12		4		4	1		3

38	SHELAR SAKSHI BHAGWAN	8	1		3	1		3
39	SHELA VALE ASHWIN BHASKAR	8	2		2	2		2
40	SHEVAKAR AKASH BHASKAR	12	5	1	2	4		1
41	SHINDE KALPESH CHUNILAL	8	3			3	2	0
42	TEMKAR SEJAL SUSHANT	8	2	1	0	3		2
43	WAJE KUNAL SURESH	AB						
No. of students attempted the question		38	16	26	37	15	27	
No. of students above threshold		34	13	24	33	13	16	
Attainment %		89	81	92	89	87	59	

Course Outcome	CO attainment(%)
C01	87
C02	79



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Vishwatmak Jangli Maharaj Ashram Trust's
ATMA MALIK INSTITUTE OF TECHNOLOGY & RESEARCH

Department of Computer Engineering

Class- BE COMP

SEM- VII

Academic Year-2023-24

Subject- NLP

Internal Assessment II- 2 Marks

Roll No.	Name of student	Total Marks out of 20	Q. 1			Q. 2		
			A(5)	B(5)	C(5)	A(5)	B(5)	C(5)
			CO6	CO3	CO3	CO4	CO6	CO5
1	Bagul Vrushali Vilas	12		3	2	4	2	3
2	Bagul Vrutika Vilas	12		2	3	4	3	2
3	Bhor Ajay Sandip	10	1	3		4	2	
4	Bhosale Sanskruti Shivaji	13	3	3		4	3	
5	Bodake Pratik Subhash	14	3		3	4	4	
6	Bodake Siddhesh Subhash	11	2		2	3	3	
7	Borse Lalit Dadaji	10		2	3		2	3
8	Chavhan Vrushbh Ramesh	AB						
9	Dangal Hargyashri Dipak	15	3		4	5		3

10	Desale Sanj Sanjay	11		2	1		4	3
11	Dhone Dhiran Vinod	18		4	5		4	4
12	Godse Ruchita Sanjay	12	1	2		4		1
13	Gunjal Divya Rajendra	11	4	1		2	2	
14	Ichake Rushikesh Prakash	9	1	1		2	1	
15	Jadhav Bhagyashree Ashok	9		1	3	1		
16	Jadhav Devyani Rajendra	19	4	5		4		4
17	Jadhav Sandip Malhari	7	2	2			2	1
18	Jadhav Trupti Chandrakanti	6	1		0	2	1	
19	Jawale Pratiksha Vishnu	9	2		2	2	1	
20	Kamble Pratiksha Madhukar	9	1		2	3	1	
21	Kantode Pratik Dhananjay	11	3		1	4	1	
22	Katkade Prafulla Sunil	10		2	1		1	2
23	Kavaldar Bhicombai Kareppa	8	2		1		4	1
24	Khatre Pankaj Pradip	8	3		3			2
25	Kumbhar Akash Deepnarayan	7	3		2			2

26	Malekar Akshay Sanjay	12	3	3		4		2
27	Mhaske Priyanka Dattatray	17		4	4	5		4
28	Padwal Jaydeep Shantaram	12	3		4	4	1	
29	Padgule Gaurav Ganesh	15	3	3		4	5	
30	Patil Akash Datta	9	3	3		1	2	
31	Patil Sadichha Pramod	13		4	3	4	2	
32	Patil Sushant Santoshkumar	13	4	4			5	
33	Pise Trineni Jaya	12	4	3			5	
34	Raut Jagruti Shivaji	13	4			5	4	
35	Ruperi Vijaya Sunil	13	4			4	5	
36	Shelar Sakshi Bhagwan	11	2	2		4	2	
37	Shelavale Ashwin Bhaskar	9	2	2		3		2
38	Shevakar Akash Bhaskar	13	2		3	4	4	
39	Shinde Kalpesh Chunilal	9	2		3	3	1	
40	Temkar Shejal Sushant	9	3		3	3		
41	Waje Runal Suresh	12		0	4	4		4

42	Mali Amol	4	1			1		2
43	Save Prathmesh	7	3	0			2	2
44	Sunil Dokfode	AB						
45								
No. of students attempted the question			32	25	24	31	30	19
No. of students above threshold			27	23	22	29	27	17
Attainment %			84	92	92	94	90	89

Course Outcome	CO attainment(%)
CO3	92
CO4	94
CO5	89
CO6	87



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Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-13	Course Plan	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		

COURSE PLAN

Name of the staff : Mrs. Swati S. Bhoir

Subject with code : CSDC7013

Course : Natural Language Processing

Semester/Branch : V/COMPUTER

Academic Year : 2023-2024

Prerequisites : Theory of Computer Science, System Programming & Compiler

Construction Objectives

1. To define natural language processing and to learn various stages of natural language processing.
 2. To describe basic concepts and algorithmic description of the natural language levels: Morphology, Syntax, Semantics, and Pragmatics & Discourse analysis.
 3. To design and implement various language models and POS tagging techniques.
 4. To design and learn NLP applications such as Information Extraction, Question answering.
 5. To design and implement applications based on natural language processing.
- : At the end of the course, the student will be able to
1. To describe the field of natural language processing.
 - 2 To design language model for word level analysis for text processing.
 - 3 To design various POS tagging techniques and parsers.
 - 4 To design, implement and test algorithms for semantic and pragmatic analysis.
 - 5 To formulate the discourse segmentation and anaphora resolution.
 - 6 To apply NLP techniques to design real world NLP applications..

Outcomes



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Department of Computer Engineering

PO Mapping with Course Outcomes:

PO	Description	CO 1	CO 2	CO 3	CO 4
PO1	Engineering knowledge				
PO2	Problem analysis				
PO3	Design/development of solutions				
PO4	Conduct investigations of complex problems				
PO5	Modern tool usage				
PO6	The engineer and society				
PO7	Environment and sustainability				
PO8	Ethics				
PO9	Individual and team work				
PO10	Communication				
PO11	Project management and finance				
PO12	Life-long learning				

TEXT BOOKS:

1. Daniel Jurafsky, James H. and Martin, Speech and Language Processing, Second Edition, Prentice Hall, 2008.
2. Christopher D. Manning and Hinrich Schütze, Foundations of Statistical Natural Language Processing, MIT Press, 1999.

REFERENCE BOOKS:

1. Siddiqui and Tiwary U.S., Natural Language Processing and Information Retrieval, Oxford University Press, 2008.
2. Daniel M Bikel and Imed Zitouni — Multilingual natural language processing applications: from theory to practice, IBM Press, 2013.
3. Alexander Clark, Chris Fox, Shalom Lappin — The Handbook of Computational Linguistics and Natural Language Processing, John Wiley and Sons, 2012.
4. Nitin Indurkha and Fred J. Damerau, — Handbook of Natural Language Processing, Second Edition, Chapman and Hall/CRC Press, 2010.
5. Niel J le Roux and Sugnet Lubbe, A step by step tutorial: An introduction into R application and programming.
6. Steven Bird, Ewan Klein and Edward Loper, Natural language processing with Python: analyzing text with the natural language toolkit, O'Reilly Media, 2009.



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Lesson Plan: 37 lectures conducted.

Sr. No	Module/Chapter Name	Lecture No.	Topic Planned	Planned Date	Conducted Date	Delivery Method	CO Mapped	Remark
2	Word Level Analysis	1	Origin & History of NLP; Language, Knowledge and Grammar in language processing;	10/7/23	11/7/23	Chalk and Board/PP T's/Video / Smartboard	CO1	
		2	Stages in NLP; Ambiguities and its types in English and Indian Regional Languages;	11/7/23	12/7/23			
		3	Challenges of NLP, Applications of NLP	13/7/23	13/7/23			
		4	Basic Terms: Tokenization, Stemming, Lemmatization; Survey of English Morphology;	17/7/23	17/7/23			
		5	Inflectional Morphology, Derivational Morphology; Regular expression with types;	18/7/23	18/7/23			
		6	Morphological Models: Dictionary lookup, finite state morphology;	20/7/23	24/7/23			
		7	Morphological parsing with FST (Finite State Transducer);	24/7/23	31/7/23			
		8	Lexicon free FST Porter Stemmer algorithm;	25/7/23	1/8/23			
		9	Grams and its variation: Bigram, Trigram; Simple (Unsmoothed) N-grams;	27/7/23	2/8/23			
		10	N-gram Sensitivity to the Training Corpus; Unknown Words: Open versus closed vocabulary tasks;	29/7/23	7/8/23			
		11	Evaluating N-grams: Perplexity; Smoothing: Laplace Smoothing; Good-Turing Discounting;	1/8/23	8/8/23			



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3	Syntax analysis	12	Self-Learning topics: Noisy channel models, various edit distance, Advance Issues in Language Modelling	28/8/23	9/8/23			
		13	Part-Of-Speech tagging (POS);	7/8/23	9/8/23			
		14	Tag set for English (Upenn Treebank);	7/8/23	11/8/23			
		15	Difficulties /Challenges in POS tagging;	8/8/23	16/8/23			
		16	Rule-based, Stochastic and Transformation-based tagging;	10/8/23	22/8/23			
		17	Generative Model: Hidden Markov Model	14/8/23	22/8/23			
		18	(HMM Viterbi) for POS tagging;	17/8/23	25/8/23			
		19	Issues in HMM POS tagging; Discriminative Model: Maximum Entropy model,	21/8/23	24/8/23			
		20	Conditional random Field (CRF); Parsers: Top down and Bottom up;	22/8/23	29/8/23			
		21	Modelling constituency; Bottom Up Parser: CYK, PCFG (Probabilistic Context Free Grammar),	24/8/23	31/8/23			
4	Semantic Analysis	22	Shift Reduce Parser; Top Down Parser; Early Parser, Predictive Parser	28/8/23	12/9/23			
		23	Evaluating parsers, Parsers based language modelling, Regional languages POS tree banks	29/8/23	12/9/23			
		24	Introduction, meaning representation; Lexical Semantics; Corpus study; Study of Various language dictionaries like WordNet, Babelnet;	31/8/23	25/9/23			
		25	Relations among lexemes & their senses –	4/9/23	29/9/23			

Chalk and Board/PP T's/Video / Smartboa
 Smartboa rd

CO3

- TA - 1
 - IDP
 - Teachers day
 - Aug. day





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		Homonymy, Polysemy, Synonymy,					
	26	Hyponymy; Semantic Ambiguity; Word Sense	5/9/23	29/9/23			
	27	Disambiguation (WSD); Knowledge based approach(Lesk's Algorithm),	7/9/23	3/10/23		CO4	
	28	Supervised (Naïve Bayes, Decision List),	11/9/23	2/10/23			
	29	Introduction to Semi-supervised method (Yarowsky)	12/9/23	9/10/23			
	30	Unsupervised (Hyperlex) Dictionaries for regional languages, Distributional Semantics, Topic Models Discourse: Reference Resolution, Reference Phenomena,	25/9/23	9/10/23			
Pragmatic & Discourse Processing	31	Syntactic & Semantic constraint on coherence;	26/9/23	11/10/23	Chalk and Board/PP T's/Video / Smartboard	CO5	
	32	Syntactic & Semantic constraint on coherence	5/10/23	12/10/23			
	33	Anaphora Resolution using Hobbs and Canterling Algorithm	5/10/23	17/10/23			
	34	Anaphora Resolution using Hobbs and Canterling Algorithm	9/10/23	18/10/23			
	35	Discourse segmentation, Conference resolution	10/10/23	19/10/23			
Applications of NLP	36	Case studies on (preferable in regional language):	12/10/23	9/10/23	Chalk and Board/PP T's/Video / Smartboard	CO6	
	37	Machine translation;	16/10/23	4/11/23			
	38	Text Summarization; Sentiment analysis;	17/10/23	4/11/23			
	39	Information retrieval; Question Answering system	19/10/23	6/11/23			



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	40	Applications based on Deep Neural Network with NLP such as LSTM network, Recurrent Neural network etc.	23/07/23	6/11/23			
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Subject In charge


HOD


Vice-Principal


Principal



H Sabka Malik Atma IT
Vishwatmak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACAD-DI-14 A	Practical / Lab Plan	Academic Year: 2023-24
Rev : 00		Semester: ODD
Date: 11-7-2022		

Course Code: CSDL7013		Course Name: Natural Language processing			Semester: ODD		
Name of Faculty: Swati S. Bhoir					Batch: 1		
Exp. No.	Name of Experiment	Equipments / Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remark
1	Study various applications of NLP and Formulate the Problem Statement for Mini Project based on chosen real world NLP applications: [Machine Translation, Text Categorization, Text summarization, chat Bot, Plagiarism, Spelling & Grammar checkers, Sentiment / opinion analysis, Question answering, Personal Assistant, Tutoring Systems, etc.]	Any Search Engine	2Hrs	11/7/23	19/7/23	26/7/23	
2	Apply various text preprocessing techniques for any given text : Tokenization and Filtration & Script Validation.	Python with NLTK Toolkit	2Hrs	19/7/23	26/7/23	16/8/23	
3	Apply various other text preprocessing techniques for any given text : Stop WordRemoval, Lemmatization / Stemming.		2Hrs	26/7/23	16/8/23	30/8/23	
4	Perform morphological analysis and word generation for any given text.		2Hrs	21/8/23	30/8/23	6/9/23	
5	Implement N-Gram model for the given text input.		2Hrs	8/8/23	6/9/23	27/9/23	





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Department of Computer Engineering

6	Study the different POS taggers and Perform POS tagging on the given text.	2Hrs	16/8/23	27/9/23	4/10/23	11/11/23	
7	Perform Chunking for the given text input.	2Hrs	22/8/23	4/10/23	11/11/23		
8	Implement Named Entity Recognizer for the given text input.	2Hrs	30/8/23	11/10/23	11/11/23		
9	Mini Project Report: For any one chosen real world NLP application.	2Hrs	6/9/23	18/10/23	18/11/23		
10	Implementation and Presentation of Mini Project	2Hrs	27/9/23	18/10/23	18/11/23		

Name & Signature of Subject In-charge

Name & Signature of
HOD



II Satska Malik Atma II
Vishwamvak Jangli Maharaj Ashram Trust's
Atma Malik Institute of Technology & Research (AMRIT)
Department of Computer Engineering

ACADIC-14 A	Practical / Lab Plan	Academic Year 2021-24
Rev. (N)		Semester: OPD
Date: 11-7-2022		

Course Code: CSD17013		Course Name: Natural Language processing			Semester: ODD		
Name of Faculty : Smit S. Rhotr		Batch: II					
Exp. No.	Name of Experiment	Equipments / Software required	Planned Hrs.	Planned Date	Date of Performance	Date of Assessment	Remark
1	Study various applications of NLP and Formulate the Problem Statement for Atmi Project based on chosen real world NLP applications: [Machine Translation, Text Categorization, Text summarization, chat Bot, Plagiarism, Spelling & Grammar checkers, Sentiment / opinion analysis, Question answering, Personal Assistant, Tutoring Systems, etc.]	Any Search Engine	2Hrs	27/7/23	27/7/23	28/7/23	
2	Apply various text preprocessing techniques for any given text : Tokenization and Filtration & Script Validation.	Python with NLTK Toolkit	2Hrs	18/7/23	28/7/23	11/8/23	
3	Apply various other text preprocessing techniques for any given text : Stop WordRemoval, Lemmatization / Stemming.		2Hrs	28/7/23	11/8/23	9/8/23	
4	Perform morphological analysis and word generation for any given text.		2Hrs	18/7/23	9/8/23	28/8/23	
5	Implement N-Gram model for the given text input.		2Hrs	27/8/23	28/8/23	19/9/23	



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6	Study the different POS taggers and Perform POS tagging on the given text.	2Hrs	22/8/23	12/9/23	23/9/23	
7	Perform Chunking for the given text input.	2Hrs	29/8/23	26/9/23	3/10/23	
8	Implement Named Entity Recognizer for the given text input.	2Hrs	5/9/23	3/10/23	2/11/23	
9	Mini Project Report: For any one chosen real world NLP application.	2Hrs	12/9/23	1/11/23	7/10/23	
10	Implementation and Presentation of Mini Project	2Hrs	12/9/23	17/11/23	1/10/23	

Name & Signature of Subject In-charge

Name & Signature
HOD