



VSB College of Engineering Technical Campus

Approved by AICTE, New Delhi & Affiliated to Anna University
Coimbatore to pollachi Road NH - 209, Ealur Privu, Kinathukadavu Taluk,
Coimbatore - 642109, Tamilnadu, India. Email: office@vsbcetc.com Website : www.vsbetc.com

Criterion -2 Teaching-Learning and Evaluation

2.6 Students Performance and Learning Outcome

2.6.1 PROGRAMME AND COURSE OUTCOMES FOR ALL PROGRAMMES OFFERED BY THE INSTITUTION ARE STATED AND DISPLAYED ON WEBSITE AND COMMUNICATED TO TEACHERS AND STUDENTS		
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V.S.B. College of Engineering Technical Campus,
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Program Outcomes (POs)

Engineering Graduates will be able to

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, review 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 the public health and safety, and the 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 modeling 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.




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10. Communication: Communicate effectively on complex engineering activities with the engineering community and with 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.

11. 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.

12. 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):

PSO1 –Enable the students to design, analyze and evaluate the mechanical engineering components through innovative projects.

PSO2 – Enable the students to take up career in prominent industries or to pursue higher studies in mechanical and interdisciplinary programs with high regard for ethical values, environmental and social issues




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Program Educational Objectives (PEO)

PEO1: Graduates will be a technically advanced workforce as successful professionals in the wide range of Mechanical Engineering and related fields.

PEO2: Graduates will be effective collaborators and innovators, leading in efforts to address social, technical and business issues.

PEO3: Graduates will engage in life-long learning and professional development through self- study, continuing education or graduate and professional studies in engineering and business



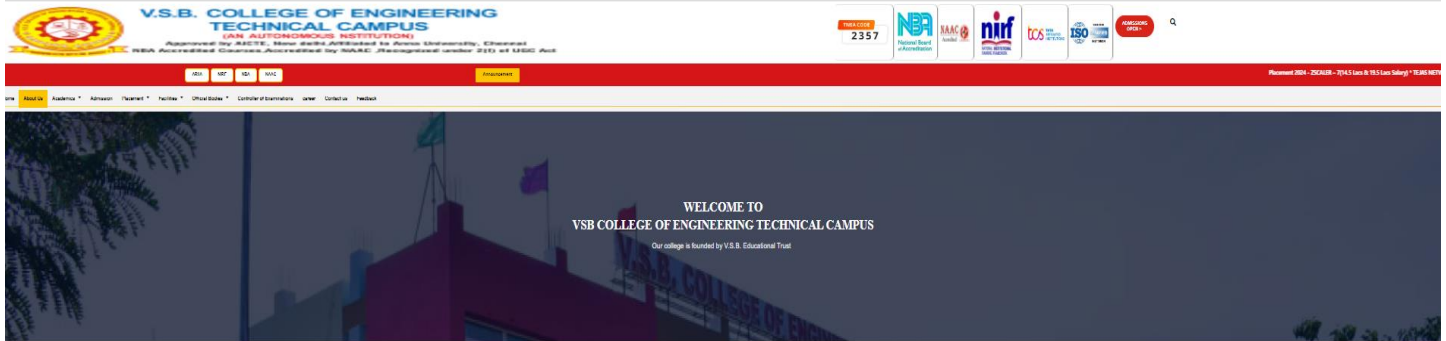

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VISION & MISSION OF THE COLLEGE



OUR VISION & MISSION

<p>VISION</p> <p>To be a renowned resource centre in the sphere for learning education in Civil Engineering to equip the graduates to meet the sustainable development of Construction industry for the betterment of the society.</p>	<p>MISSION</p> <p>To provide an ambiant environment for learning learning process. To equip the students with deep knowledge in solving complex Engineering and real world problems, by innovative techniques in association with industries. To motivate the students for higher education and research to face the global challenges. To inculcate social responsibility, ethical values and a spirit of innovation & entrepreneurship in the students.</p>
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Thirumagan
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ENGINEERING PROGRAMS

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**V.S.B. COLLEGE OF ENGINEERING
TECHNICAL CAMPUS**
(AN AUTONOMOUS INSTITUTION)
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NBA Accredited Courses, Accredited by NAAC, Recognized under 2(f) of UGC Act

TNEA CODE
2357

NBA
National Board
of Accreditation

NAAC
Accredited

nirf
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RANKING FRAMEWORK

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INSTITUTION

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OPEN >**

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- Agricultural Engineering
- Artificial Intelligence and Data Science
- Artificial Intelligence and Machine Learning
- Civil Engineering
- Computer Science & engineering
- Electrical & Electronics Engineering
- Electronics & Communication Engineering
- Information Technology
- Mechanical Engineering

ACADEMICS

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ENGINEERING PROGRAM- MECHANICAL ENGINEERING

VISION MISSION

Gmail YouTube lab schedule - Yahoo! Maps

About the Department

One of the founding departments of VSB College of Engineering Technical Campus, the Mechanical Engineering Department has played a leading role in evolving an 'Engineering Science' based curriculum. Today, the department of mechanical engineering of VSBCEC attracts and features an extraordinary rich diversity and quantity of talented individuals. The Department of Mechanical Engineering is established in the year 2012 and offers an UG Programme, B.E. Mechanical Engineering with a Sanctioned intake of 60 Seats. The department is specifically concerned with design, development, installation, operation and maintenance of just about anything that has moveable parts. Mechanical Engineering discipline involves Analysis, Design, Manufacturing & Maintenance of Mechanical systems. Students of Mechanical Engineering are exposed to concepts in Mechanics, Kinematics, Thermodynamics, Fluid Mechanics, Energy conversion & conservation, etc. Whenever there is manufacturing process, a Mechanical Engineer will play a role. We edify our students to do even an ordinary thing in an extra-ordinary way, so that they contrive their new challenges, dream high and work hard with faith, concentration and determination.

OUR VISION & MISSION

VISION
To be recognized as a Centre of Excellence in Mechanical Engineering Education

MISSION
The Department strives to contribute to the expansion of knowledge in the discipline of Mechanical Engineering

- To impart quality education to the students with practical exposure by design and development of mechanical systems
- To enhance the students' skills through imparting fundamental principles of Mechanical Engineering and to prepare them for diverse career opportunities
- To motivate students to excel by augmenting their entrepreneurial skills to set up their own concerns
- To promote research activities through encouraging the faculty members to attend conferences, development programs and to accomplish publications on a regular basis



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ENGINEERING PROGRAM- MECHANICAL ENGINEERING

PEOs

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The screenshot shows the website header with the college logo and name: "V.S.B. COLLEGE OF ENGINEERING TECHNICAL CAMPUS (AN AUTONOMOUS INSTITUTION)". It lists approvals from AICTE, Anna University, and NAAC. Accreditation logos for AICTE (2357), NBA, NAAC, NIRF, TCS, ISO, and AIB are displayed. A placement statistics banner is visible at the top right. The main content area features a large image of industrial machinery with the heading "Mechanical Engineering" and the tagline "Machines rule the world and Mechanical Engineering rule the Machines". Below this, a short paragraph describes the department's focus on product development and manufacturing.

About the Department

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ENGINEERING PROGRAM- MECHANICAL ENGINEERING

POs

OUR VISION & MISSION PEO PO PAO

PROGRAM OUTCOMES

- PO1**
Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2**
Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO3**
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 the public health and safety, and the 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 modeling 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 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.
- 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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ENGINEERING PROGRAM- MECHANICAL ENGINEERING

PSOs

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The screenshot shows the website header with the college logo, name, and accreditation details. Below the header is a navigation menu. The main content area features a large image of a mechanical part with the text "Mechanical Engineering" and "Machines rule the world and Mechanical Engineering rule the Machines". Below this is a paragraph describing the department's focus on responsible development of products, processes, and power.

About the Department

One of the founding departments of VSB College of Engineering Technical Campus, the Mechanical Engineering Department has played a leading role in evolving an 'Engineering Science' based curriculum. Today, the department of mechanical engineering of VSBCECT attracts and features an extraordinary rich diversity and quantity of talented individuals. The Department of Mechanical Engineering is established in the year 2012 and offers an UG Programme, B.E. Mechanical Engineering with a Sanctioned intake of 60 Seats. The department is specifically concerned with design, development, installation, operation and maintenance of just about anything that has moveable parts. Mechanical Engineering discipline involves Analysis, Design, Manufacturing & Maintenance of Mechanical systems. Students of Mechanical Engineering are exposed to concepts in Mechanics, Kinematics, Thermodynamics, Fluid Mechanics, Energy conversion & conservation, etc. Wherever there is manufacturing process, a Mechanical Engineer will play a role. We edify our students to do even an ordinary thing in an extra-ordinary way, so that they continue their new challenges, dream high and work hard with faith, concentration and determination.

OUR VISION & MISSION

PEO

PROGRAM SPECIFIC OUTCOME

PSO1

Enable the students to design, analyze and evaluate the mechanical eng

PSO2

Enable the students to take up career in government industries or to pursue with high regard for ethical values, environmental and social issues.

Career Opport

It's the fusion of science
Mechanical engineer
construction, and test
mechanical engineers
technology's cutting
nanotechnology, or
geomechanics, etc. a
smart manufacturing
are most actively exp



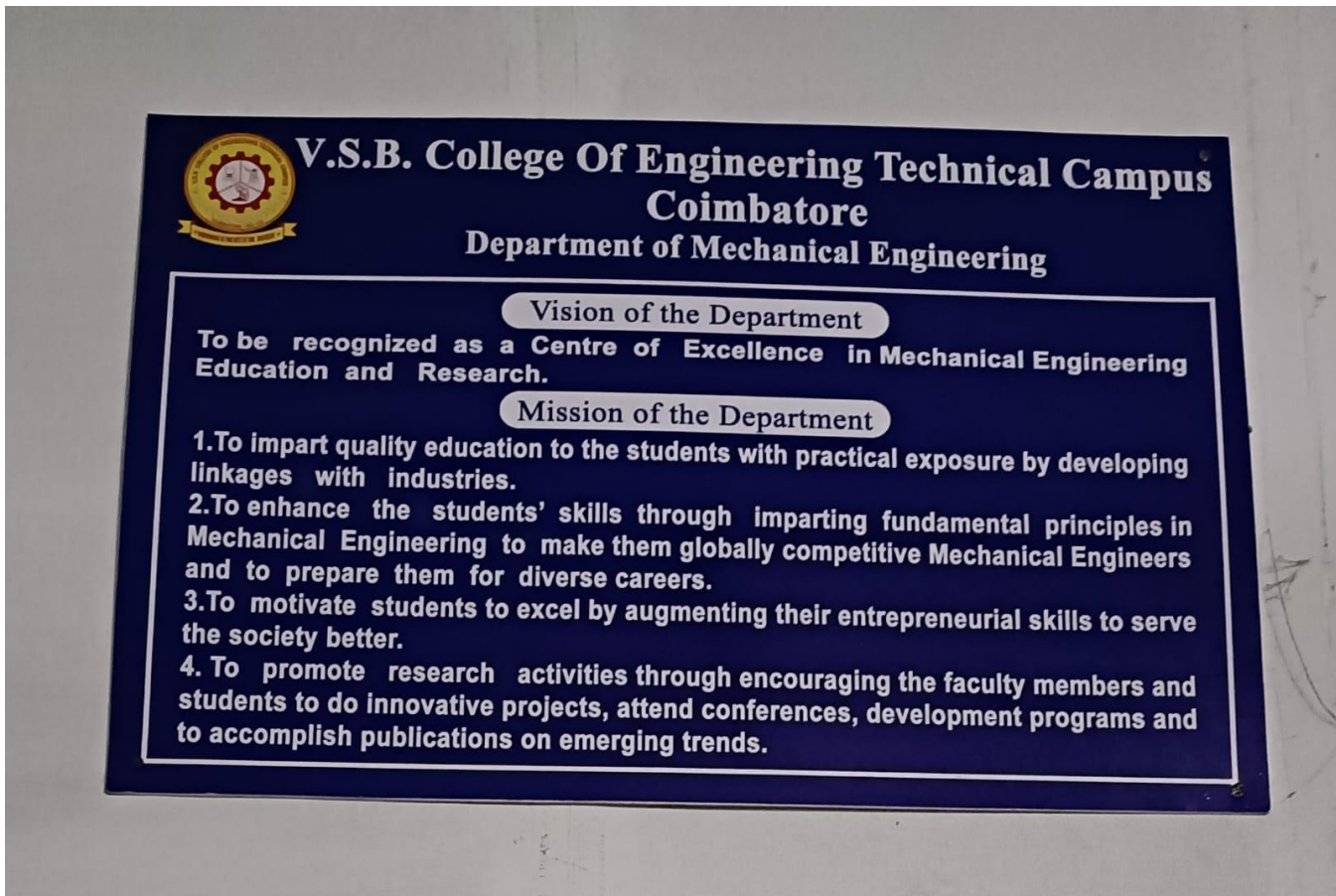
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VISION & MISSION STATEMENT IN DEPARTMENT



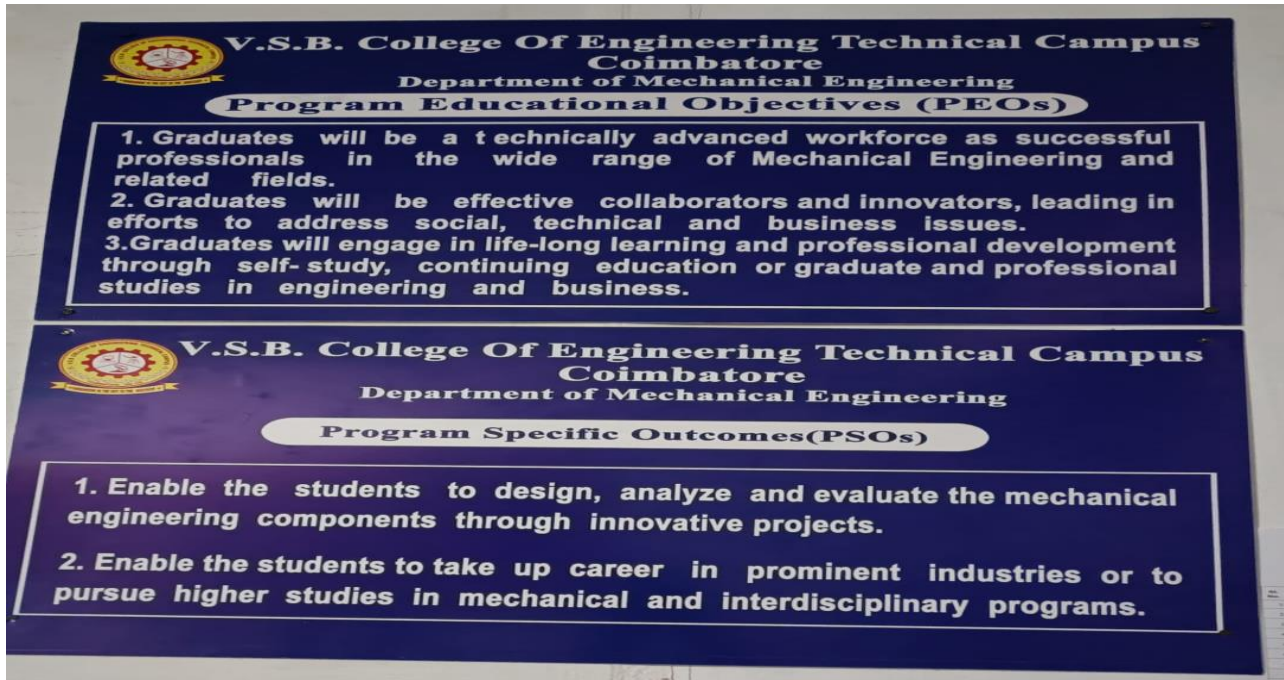

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PEOs & PSOs STATEMENT IN DEPARTMENT




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PROGRAM OUTCOMES (Pos) IN CLASSROOMS

**V.S.B. College Of Engineering Technical Campus
Coimbatore
Department Of Artificial Intelligence And Data Science
Program Outcomes(POs)**

- 1. Engineering knowledge:**
Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:**
Identify, formulate, review 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 the public health and safety, and the 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 modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society:**
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- 7. Environment and sustainability:**
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- 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 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.
- 11. 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.
- 12. 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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COURSE OUTCOMES IN INTERNAL ASSESSMENT QUESTION PAPERS

Reg. No.

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DEPARTMENT OF MECHANICAL ENGINEERING
INTERNAL ASSESSMENT TEST II
ME 3451- THERMAL ENGINEERING

Year / Semester / Branch: II Year / IV Semester / B.E. Mechanical Engineering
Faculty Name: Mr.V.Karthikeyan
Max. Marks: 50

Date: 10/04/23
Time: 90 min

PART-A Answer ALL Questions (5x2=10 Marks)

- Write down the principles of reaction turbine. (Nov/Dec 19) [CO3,L1]
- Define the term compounding and mention its types. (Nov/Dec 19) [CO4,L1]
- State stoichiometric air-fuel ratio. (Nov/Dec 19) [CO4,L1]
- Mention the effects of Knocking. (April/May17) [CO4,L1]
- Compare SI and CI Engine.

PART-B Answer ALL Questions (2x13=26 Marks)

- (a) The velocity of steam leaving the nozzle of an impulse turbine is 1000 m/s and the nozzle angle is 20°. The blade velocity is 350 m/s and the blade velocity of coefficient is 0.85. Assuming no losses due to shock at inlet calculate for a mass flow of 1.5 kg/s and symmetrical blading. Estimate (i) Blade inlet angle Driving force on the wheel, (ii) Axial thrust in the wheel and (iii) Power developed by the turbine. (13) [CO3,L5]
- (b) Explain the working principle of any 2 types of Governing with neat sketch. (13) [CO3,L2]
- (a) Draw the port timing diagram for 2 stroke SI Engine and explain the salient points (April/May17) (13) [CO4,L2]
- (b) Draw the Valve timing diagram for 4 stroke CI Engine and explain the salient points. (13) [CO4,L2]

PART-C Answer the Question (1x14=14 Marks)

- (a) A simple impulse turbine has one ring of moving blades running at 150 m/s. The absolute velocity of steam at exit from the stage is 85 m/s at an angle of 80° from the tangential direction. Blade velocity coefficient is 0.82 and the rate of steam flowing through the stage is 2.5 kg/s. If the blades are equiangular. Draw velocity diagram and Estimate (i) Blade angles, (ii) Nozzle angle (iii) absolute velocity of steam issuing from the nozzle and (iv) Axial thrust.. (14) [CO3,L5]
- (b) Write short notes on following parts (14) [CO4,L2]
(a) Connecting rod (b) Crank shaft (c) Piston rings (d) Cylinder liner

CO3: To Evaluating the performance of steam turbines through velocity triangles, understand the need for governing and compounding of turbines
CO4: To analyzing the working of IC engines and various auxiliary systems present in IC engines
L1: Remembering; L2: Understanding; L3: Applying L4: Analyzing L5: Evaluating

Prepared by V.Karthikeyan
(Mr.V.Karthikeyan)

Approved by
(HOD-MECH)

Form No. AC 08d Rev.No. 01 Effective Date: 02/08/2021



V.Karthikeyan
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COURSE OUTCOMES IN INTERNAL ASSESSMENT ANSWER SCRIPTS

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INTERNAL ASSESSMENT TEST - I / II / III (ODD / EVEN Semester)

Register Number: 7 2 3 7 2 1 1 1 4 0 0 9

	7 2 3 7	V.S.B. College of Engineering Technical Campus	
	BE - mechanical Engineering	Semester	IV
	ME 3451	Date & Session	11/4/23 OF PN
	Thermal Engineering	Page used	9

Name of the Hall Superintendent: Gowmetha P

All particulars given are verified

Signature of the Hall Superintendent with date: R. [Signature] 11/4/23

(To be filled in by the candidate)
 Date: 11/4/23 Session: FN
 Subject Code / Title: ME 3451 Thermal Engineering No. of pages used: 9

PART - A				PART - B & C						
Question No.	Tick (✓) the questions attended	CO3 marks	CO4 marks	Q No.	Tick (✓) the Questions attended		CO3 Marks		CO4 Marks	
					(i)	(ii)	(i)	(ii)	(i)	(ii)
1	✓	2		6 (a)	✓		13			
2	✓	2		6 (b)						
3	✓		2	7 (a)						
4	✓		1	7 (b)						
5	✓		2	8 (a)	✓		12			
Total		4	5	Total			25			

CO Total Marks	CO Attained Marks	CO Total Marks	CO Attained Marks
31	29	19	05

Grand Total = 59/50 = 68%

Signature of the Examiner: V. K. [Signature]
 Name of the Examiner: S9

Signature of the Examiner: V. [Signature]
 Signature of the Examiner: [Signature]

Handwritten notes on the right side of the form:
 L = 2490
 = 2490
 = 1535
 2 = 098

Handwritten notes at the bottom right:
 3128
 265
 5279
 2101
 1
 112



[Signature]
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INTERNAL ASSESSMENT TEST - I / II / III (ODD / EVEN Semester)

Register Number: **7 2 3 7 1 9 1 1 4 0 1 1**

College Code	7 2 3 7
College Name	V.S.B. COLLEGE OF ENGINEERING TECHNICAL CAMPUS
Degree / Branch	BE - MECHANICAL ENGINEERING
Subject Code	ME8094
Subject Title	COMPUTER INTEGRATED MANUFACTURING SYSTEMS
Semester	VIII
Date & Session	27-02-2023 / FN
No. of Pages used	10

Question Paper Code	All particulars given are verified	Signature of the Hall Superintendent with Date
P. Srinivasan Name of the Hall Superintendent		P. Srinivasan 27/2/23

(To be filled in by the candidate)

Date: **27-02-23** Session: **FN**

Subject Code / Title: **ME8094**
COMPUTER INTEGRATED MANUFACTURING SYSTEMS

Question Paper Code: _____ No. of pages used: **10**

PART - A				PART - B & C							
Question No.	Tick (✓) the questions attended	CO Marks	CO Marks	Q No.	Tick (✓) the Questions attended		CO Marks		CO Marks		
					(i)	(ii)	(i)	(ii)	(i)	(ii)	
1	✓	2		6 (a)	✓	✓	5	7			
2	✓	2	8	6 (b)							
3	✓		2	7 (a)	✓					13	
4	✓		2	7 (b)							
5	✓		2	8 (a)	✓	✓	9	5			
Total		4	6	Total			17	9	12		
CO Total Marks		31	CO Attained Marks	30	CO Total Marks		17	CO Attained Marks	19		
Grand Total = 98 %				Name of the Examiner: V. Kalikrishnan		Signature of the Examiner: V. Kalikrishnan					
Date: 28-2-23											

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timing of production over intermediate future (3 months to 1 year) considering over of aggregate plan



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COURSE OUTCOMES IN INTERNAL ASSESSMENT MARK STATEMENT



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Department of Mechanical Engineering
Academic Year: 2022-2023 (Even Semester)
Marks Statement for Internal Assessment Test II

Degree, Semester & Branch: B.E, IV & Mechanical Engineering

Course Code & Title: ME3451 & Thermal Engineering

Name of the Faculty member: V. Karthikeyan

Max. Marks: 100

Sl. No.	Reg. No.	Name of the Student	Marks Scored	CO3	CO4	CO1 %	CO2 %
1.	723721114001	ABDUL NAJEEF M	62	34	28	54.84	73.68
2.	723721114002	ANAND G	50	06	44	17.64	66.67
3.	723721114004	ARUN KRISHNAN M	36	12	24	19.35	63.16
4.	723721114005	BALA SUBRAMANIAN G	36	00	36	0.00	94.74
5.	723721114007	EZHIL SARATHY MS	52	30	22	48.39	57.89
6.	723721114008	HARISH N	36	02	34	3.23	89.47
7.	723721114009	KARTHIK N	68	58	10	93.55	26.32
8.	723721114011	LOGESH N	62	38	24	61.29	63.16
9.	723721114012	MOHAMED RIYAS S	34	22	12	35.48	31.58
10.	723721114013	MUKESH KUMAR S	24	08	16	12.90	42.11
11.	723721114014	MUTHURAM R	28	24	04	38.71	10.53
12.	723721114016	RAHUL RS	50	10	40	29.41	60.61
13.	723721114017	RAMESH KANNAN P	52	12	40	35.29	60.61
14.	723721114018	RAMSIVAM B	66	50	16	80.65	42.11
15.	723721114019	SANJAY KUMAR N	46	24	22	38.71	57.89
16.	723721114021	VISHNU KARTHIK G	50	30	20	48.39	52.63
17.	723721114301	AJAY AADHIRAAJ.V	40	06	34	9.68	89.47
18.	723721114303	DINESH KUMAR S	52	08	44	23.52	66.67
19.	723721114304	YAVINDRAPRABHU N	40	18	22	29.03	57.89

No. of Students appeared (n)	19	No. of Students absent (a)	19
No. of Students Scored > 60 marks (x) / Percentage (x/n) *100			04 / 21.05%
No. of Students Scored ≥ 50 marks (y) / Percentage (y/n) *100			10 / 52.63%
No. of Students failed (scored marks < 50 out of 100) / Percentage (a/n) *100			09 / 47.37%

Lowest Marks: 24	Average Marks: 46.52	Highest Marks: 68
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Attainment Level*	CO 3: -	CO 4: -	Overall Attainment: -
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Number of Students Scored Marks in Various Ranges:
<50: 09; 50-60: 06; 61-70: 04; 71-80: 0; 81-90: 0; 91-100: 0

*Attainment Level 1 : 60 % Students Scoring More than 60% of Marks; Attainment Level 2 : 70 % Students Scoring More than 60% of Marks; Attainment Level 3 : 80 % Students Scoring More than 60% of Marks

V. Karthikeyan
Signature of the Valuer with date: 30/9/23

[Signature]
HOD 13.8.23

[Signature]
Principal

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Rev. No. 01
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Effective Date: 02/08/2021



[Signature]
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Department of Mechanical Engineering Academic Year: 2022-2023 (Even Semester) Marks Statement for Internal Assessment Test I

Degree, Semester & Branch: B.E. VIII & Mechanical Engineering
Course Code & Title: ME 8094 & Computer Interated Manufacturing System
Name of the Faculty member: Mr. V. Karthikeyan Max. Marks: 100

Sl. No.	Reg. No.	Name of the Student	Marks Scored	CO1	CO2	CO1 %	CO2 %
1.	723719114001	ABIN P.A	88	42	36	67.74	94.74
2.	723719114003	ALLAN MARIANNAN.A	82	44	38	72.13	100.00
3.	723719114004	ANEESH KUMAR .V	82	44	38	70.97	100.00
4.	723719114005	ARUNRAJ L R	70	42	28	67.74	73.68
5.	723719114006	DEEPAK .S	92	54	38	87.10	100.00
6.	723719114008	GOKUL NATHAN .P	92	56	36	90.32	94.74
7.	723719114009	HARI PRAKASH .M	92	54	38	87.10	100.00
8.	723719114010	KAMALESH .K.B	86	48	38	77.42	100.00
9.	723719114011	LAVANYA .P.A	98	60	38	96.77	100.00
10.	723719114012	MAHAMUNI .S	88	54	34	87.10	89.47
11.	723719114014	MOUN MANOJ .A	88	60	38	96.77	100.00
12.	723719114016	NANDHAKUMAR .S	94	58	34	93.55	89.47
13.	723719114017	NAVEEN .G	84	46	38	74.19	100.00
14.	723719114018	PRAVIN .S	88	50	38	80.65	100.00
15.	723719114019	PREM KUMAR .M	84	46	38	74.19	100.00
16.	723719114020	RAGHURAM R.K.	70	32	38	51.61	100.00
17.	723719114021	ROHITH.S	84	46	38	74.19	100.00
18.	723719114023	SARAVANA KUMAR P	66	32	34	51.61	89.47
19.	723719114025	SASIKUMAR .C	88	54	34	87.10	89.47
20.	723719114026	SAUNDARA RAJAN .R	70	32	38	51.61	100.00
21.	723719114027	SUDHAKAR.N	78	40	38	64.52	100.00
22.	723719114029	SUGUMAR .M	80	46	34	74.19	89.47
23.	723719114030	UTHYA KUMAR .A	64	26	38	41.94	100.00
24.	723719114031	VARADHARAJA PERUMAL .R	64	34	30	54.84	78.95
25.	723719114032	VARUN KUMAR .P	78	40	38	64.52	100.00
26.	723719114033	VELLAISAMY .P	94	56	38	90.32	100.00
27.	723719114034	YOGESH.M	52	22	30	35.48	78.95
28.	723719114035	YOGESHWARAN .M	76	38	38	61.29	100.00
29.	723719114301	DARSHISH PREM KUMAR SIMSON	72	40	32	64.52	84.21
30.	723719114303	LOGASUNDAR.K	64	30	34	48.39	89.47
31.	723719114306	VARUN.H	88	54	34	87.10	89.47
32.	723719114307	VIJAYSARATHI.V	88	50	38	80.65	100.00

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to 1 year) considering over



V. Karthikeyan
Principal

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No. of Students appeared (n)	32	No. of Students absent (n)	00
No. of Students Scored ≥ 60 marks (x) / Percentage (x/n) * 100			31 / 96.8%
No. of Students Scored ≥ 50 marks (y) / Percentage (y/n) * 100			32 / 100%
No. of Students failed (scored marks < 50 out of 100) / Percentage (a/n) * 100			0/0%
Lowest Marks: 52	Average Marks: 80.75	Highest Marks: 98	
Attainment Level*	CO 1:-3	CO 2:-3	Overall Attainment: -3
Number of Students Scored Marks in Various Ranges:			
< 50 : 0; 50-60: 01; 61-70: 07; 71-80: 05; 81-90: 13; 91-100: 06			
*Attainment Level 1 : 60 % Students Scoring More than 60% of Marks; Attainment Level 2 : 70 % Students Scoring More than 60% of Marks; Attainment Level 3 : 80 % Students Scoring More than 60% of Marks			

[Signature]
Signature of the Valuer with date: 11/3/23

[Signature]
HOD 11/3/23

[Signature]
Principal

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[Signature]
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COURSE OUTCOMES IN FACULTY COURSE FILE



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	Multipoint Fuel Injection system and Common Rail Direct injection systems. Ignition systems — Magneto, Battery and Electronic. Lubrication and Cooling systems. Concepts of Supercharging and Turbo charging — Emission Norms.	
TOTAL HOURS		60

TEXT/REFERENCE BOOKS:

T/R	BOOK TITLE/AUTHORS/PUBLICATION
T1	Mah esh. M. Rathore, "Thermal Engineering", 1st Edition, Tata McGraw Hill, 2010.
T 2	Gan esan.V, " Internal Combustion Engines" 4th Edition, Tata McGraw Hill, 2012.
R1	Ba llaney. P, "Thermal Engineering", 25th Edition, Khanna Publishers, 2017.
R2	Domkundwar, Kothandaraman, &Domkundwar, "A Course in Thermal Engineering", 6th Edition, DhanpatRai& Sons, 2011.
R3	Gu pta H.N, "Fundamentals of Internal Combustion Engines", 2nd Edition Prentice Hall of India, 2013.
R4	Ma thur M.L and Mehta F.S., "Thermal Science and Engineering", 3rd Edition, Jain Brothers Pvt. Ltd, 2017.
R 5	So man. K, "Thermal Engineering", 2nd Edition, Prentice Hall of India, 2011.

COURSE PRE-REQUISITES:

C.CODE	COURSE NAME	DESCRIPTION	SEM
-	-	-	-

COURSE OBJECTIVES:


S.NO	DESCRIPTION
1.	To learn the concepts and laws of thermodynamics to predict the operation of thermodynamic cycles and performance of Internal Combustion(IC) engines and Gas Turbines.
2.	To analyzing the performance of steam nozzle, calculate critical pressure ratio
3.	To Evaluating the performance of steam turbines through velocity triangles, understand the need for governing and compounding of turbines
4.	To analyzing the working of IC engines and various auxiliary systems present in IC engines
5.	To evaluating the various performance parameters of IC engines

COURSE OUTCOMES:

At the end of the course, the students will be able to,

Course code	DESCRIPTION	PO(1..12) & PSO(1..2) MAPPING
C211.1	Apply thermodynamic concepts to different air standard cycles and solve problems.	PO(1,2,3,4,12) PSO (1,2)




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C211:2	To solve problems in steam nozzle and calculate critical pressure ratio.	PO(1,2,3,4,12) PSO (1,2)
C211.3:	Explain the flow in steam turbines, draw velocity diagrams, flow in Gas turbines and solve problems.	PO(1,2,3,4,12) PSO (1,2)
C211.4:	Explain the functioning and features of IC engine, components and auxiliaries.	PO (1,2,3,4,12) PSO (1,2)
C211.5:	Calculate the various performance parameters of IC engines	PO (1,2,3,4,12) PSO (1,2)

COURSE OUTCOME Versus PO & PSO MAPPING (DETAILED; HIGH:3; MEDIUM:2; LOW:1):

Course code	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
C301.1	3	2	1	1	-	-	-	-	-	-	-	1	2	1
C301.2	3	2	2	1	-	-	-	-	-	-	-	1	2	1
C301.3	3	2	2	1	-	-	-	-	-	-	-	1	2	1
C301.4	3	2	1	1	-	-	-	-	-	-	-	1	2	1
C301.5	3	2	1	1	-	-	-	-	-	-	-	1	2	1

* For Entire Course, PO /PSO Mapping: 1 (Low); 2 (Medium); 3 (High) Contribution to PO/PSO


PO1	Engineering Knowledge	PO7	Environment & Sustainability	PSO1	Professional Skills
PO2	Problem Analysis	PO8	Ethics	PSO2	Competency
PO3	Design & Development	PO9	Individual & Team Work		
PO4	Investigations	PO10	Communication Skills		
PO5	Modern Tools	PO11	Project Management & Finance		
PO6	Engineer & Society	PO12	Life Long Learning		

GAPS IN THE SYLLABUS - TO MEET INDUSTRY/PROFESSION REQUIREMENTS, POs:

SNO	DESCRIPTION	PROPOSED ACTIONS
1.	Exhaust emission characteristics of IC engine using 5 gas analyzer	Seminar

PROPOSED ACTIONS: TOPICS BEYOND SYLLABUS/ASSIGNMENT/INDUSTRY VISIT/GUEST LECTURER/NPTEL ETC




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