LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
L.B.Reddy Nagar, Mylavaram – 521 230, N.T.R. District, Andhra Pradesh, India
Affiliated to JNTUK, Kakinada & Approved by AICTE New Delhi
Accredited by NBA under Tier - I, Accredited by NAAC
An ISO 21001:2018, 500001:2018, 14001:2015 Certified Institution
DEPARTMENT OF AEROSPACE ENGINEERING
Estd.: 1998 Website: https://www.lbrce.ac.in/ase/index.php Email: hodaero@lbrce.ac.in Phone:08659-222933 Ext:624/623

Attainment of Course Outcomes (COs), Program Outcomes (POs) and Program Specific Outcomes (PSOs)

Name of Course Instructor: Mr. I. Dakshina Murthy	Reg: R23
Course Name & Code: Engineering Thermodynamics & 23AE03	
L-T-P Structure: 2-1-0	Credits: 3
Program/Sem/Sec: **B. Tech / III-Sem**	**A.Y.:** 2025-26

COURSE OUTCOMES: After the completion of the course, the student should be able to,

CO1:	Describe the thermodynamic properties of various systems (Understand – L2)
CO2:	Apply the laws of thermodynamics to analyze various thermal systems (Apply L3)
CO3:	Understand the properties of pure substances (Understand – L2)
CO4:	Formulate performance parameters of various gas power cycles (Apply L3)
CO5:	Describe the working of Internal Combustion Engines systems (Understand – L2)

Computation Procedure for Course Outcomes (COs)

Computation of CO:

Target level	Attainment level
<40% of Students got more than 60% of Marks	1
40 to <60% of Students got more than 60% of Marks	2
>=60% of Students got more than 60% of Marks	3

Assessment tools for CIE and SEE

A) Direct Assessment tools

i) Cumulative Internal Examinations (CIE) (40%)

(a) Mid exams (25 %)

(b) Assignments (5 %)

(c) Quizzes (10 %)

ii) Semester End Examinations (SEE) (60%)

COs Direct Attainment:

25 % of (a) + 5 % of (b) +10 % of (c) +60 % of SEE

B) Indirect Assessment tools

Course end survey (10 %)

Final COs Attainment = 90 % of Direct Attainment +10 % of Indirect Attainment

Attainment of COs:

	Internal Exams (15 M)	Assignments (5 M)	Quiz (10 M)	SEE (70 M)	CES	CO Attainment (0.90* Direct + 0.10*Indirect)	Target	Remarks
CO's	Attainment	Attainment	Attainment	Attainment	Attainment			
CO1	1.84	3.00	1.00	2.00	2.61	**1.98**	2.1	Not Attained
CO2	1.60	3.00	1.00	2.15	2.62	**2.01**	1.8	Attained
CO3	2.50	3.00	2.00	1.50	2.57	**1.94**	1.8	Attained
CO4	3.00	3.00	3.00	1.57	2.69	**2.20**	1.5	Attained
CO5	3.00	3.00	3.00	2.40	2.73	**2.65**	1.5	Attained

Action Taken Report on CO attainemnt:

Overall Observation:

- 4 out of 5 COs are attained
- CO1 is Not Attained (1.98 < Target 2.1)
- All other COs exceeded their targets
- CO1 – Not Attained
  - ✓ Direct Attainment : 2.61 (Good)
  - ✓ Final CO Attainment: 1.98
  - ✓ Target: 2.1
  - ✓ Gap: 0.12

Possible Reasons:

- Low Internal Exam score (1.84) compared to other COs.
- Low Quiz performance (1.00).
- SEE attainment moderate (2.00).
- Weightage impact: Since Direct attainment is 90%, slightly lower SEE/Internal scores affected final value.

Suggested Corrective Actions:

- Improve internal question alignment with CO1.
- Introduce remedial tutorials for CO1 topics.
- Include more application-based quiz questions.
- Conduct mid-semester practice tests.

Attainment of POs:

CO	% of Attainemnt	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1.99	3	3	3	3	-	-	-	-	-	-	-	3	3	3
CO2	2.02	3	3	3	3	-	-	-	-	-	-	-	3	3	3
CO3	1.90	3	3	3	3	-	-	-	-	-	-	-	3	3	3
CO4	2.13	3	3	3	3	-	-	-	-	-	-	-	3	3	3
CO5	2.63	2	3	3	3	-	-	-	-	-	-	-	3	3	3
Avg PO &PSO		2.8	3	3	3	-	-	-	-	-	-	-	3	3	3
PO and PSO		**2.1**	**2.14**	**2.14**	**2.14**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2.14**	**2.14**	**2.14**

Course Instructor

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Attainment of Course Outcomes (CO's), Program Outcomes (PO's) and Program Specific Outcomes (PSO's)

Name of Course Instructor: Mr. I. Dakshina Murthy	Reg: R23
Course Name & Code: Aerodynamics Lab 23AE55	
L-T-P Structure: 0-0-3	Credits: 1.5
Program/Sem/Sec: **B. Tech / V-Sem**	**A.Y.:** 2025-26

COURSE OUTCOMES: After the completion of the course, the student should be able to,

CO1:	To analyze the flow characteristics over aerodynamic bodies (Analyze-L4)
CO2:	To analyze nozzle flow characteristics (Analyze-L4)

Attainment of COs:

	Internal Exams (15 M)	**Assignments (5 M)**	**Quiz (10 M)**	**SEE (70 M)**	**CES**	**CO Attainment** (0.90* Direct + 0.10*Indirect)	**Target**	**Remarks**
CO's	Attainment	Attainment	Attainment	Attainment	Attainment			
CO1	3	3	3	3	2.54	**2.95**	2.2	Attained
CO2	3	3	3	3	2.56	**2.96**	2.0	Attained

Attainment of POs:

CO	**% of Attainemnt**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	**2.95**	**3**	**3**	**3**	**3**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**3**	**3**	**3**
CO2	**2.96**	**3**	**3**	**3**	**3**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**3**	**3**	**3**
Avg PO &PSO		**3**	**3**	**3**	**3**	**---**		**---**	**---**	**---**	**---**	**---**	**3**	**3**	**3**
PO and PSO attainment		**2.96**	**2.96**	**2.96**	**2.96**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.96**	**2.96**	**2.96**

Course Instructor