B.S. Abdur Rahman ™ Crescent Institute of Science & Technology
Deemed to be University u/s 3 of the UGC Act, 1956

ANNEXURE 2.6.1

<table>
<tr><th>S. No.</th><th>Details</th><th>Page No.</th></tr>
<tr><td>1.</td><td>Sample Display of POs and PSOs in class rooms seminar halls and Labs</td><td>2</td></tr>
<tr><td>2.</td><td>Lesson Plan - Engineering Graphics</td><td>7</td></tr>
<tr><td>3.</td><td colspan="2">Website link of Curriculum & Syllabus of the following programmes:
<table>
<tr><th>Programme</th><th>Link to website</th></tr>
<tr><td>B.Tech. Mechanical Engineering</td><td>https://crescent.education/wp-content/uploads/2024/03/B.Tech-Mechanical-R2021-CS-Updated-upto-December-2023.pdf</td></tr>
<tr><td>B.Com. (Professional Accounting)</td><td>https://crescent.education/wp-content/uploads/2023/06/B.Com-Professional-Accounting-R2021_C-S_05.06.2023.pdf</td></tr>
<tr><td>M.Tech. VLSI & Embedded Systems</td><td>https://crescent.education/wp-content/uploads/2023/06/M.-Tech.-VLSI-R2022_C-S_02.06.2023.pdf</td></tr>
<tr><td>M.Sc. Chemistry</td><td>https://crescent.education/wp-content/uploads/2023/06/M.Sc_.-Chemistry-R2022_C-S_06.06.23.pdf</td></tr>
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</table>

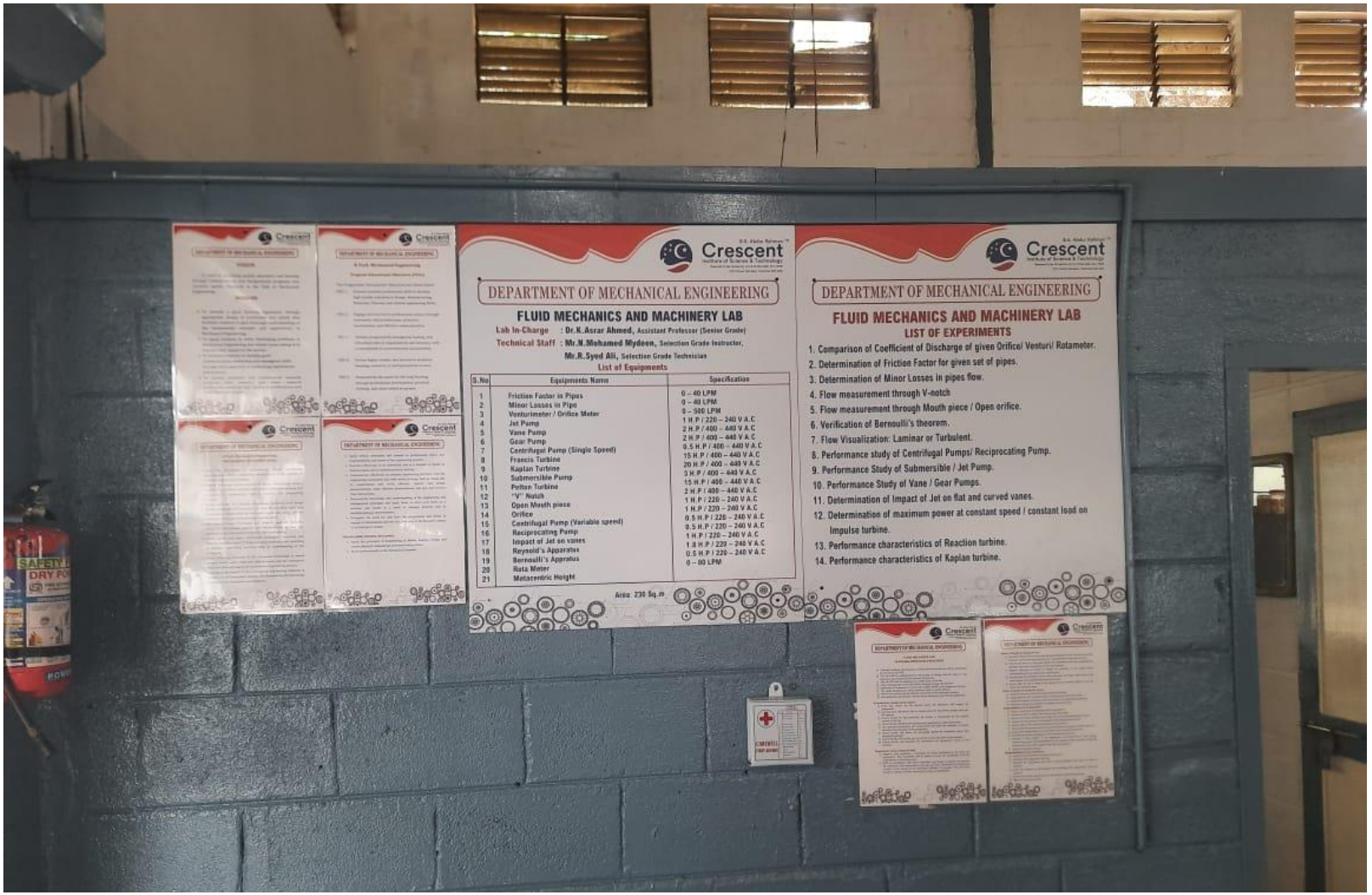

CIM LABORATORY


Crescent
CIM LABORATORY


LIBRARY
B.S. Abdur Rahman
Crescent
Institute of Science & Technology
Department of Mechanical Engineering
Library In-Charge:
Mr. Varun Kumar A, Assistant Professor
Supporting Staff:
Mr. A. Abdul Rahman, Selection Grade Technician
DEPARTMENT OF MECHANICAL ENGINEERING
VISION
To excel in providing quality education and training through Undergraduate and Postgraduate programs and carryout quality Research in the field of Mechanical Engineering.
MISSION
• To provide a good learning experience through appropriate design of curriculum and syllabi that facilitate students to gain thorough understanding of the fundamental concepts and applications in Mechanical Engineering.
• To equip students to solve challenging problems in Mechanical Engineering and related areas taking in to account their impact on the society.
• To facilitate students to develop good communication, leadership and managerial skills through team approach in conducting experiments and projects.
• To pursue academic and collaborative research activities with industry and other research institutions ensuring high quality in publications and other research outputs.


SPECIAL MACHINE SHOP
LATHE SHOP

Fluid Lab


Crescent
DEPARTMENT OF MECHANICAL ENGINEERING
FLUID MECHANICS AND MACHINERY LAB
Lab In-Charge : Dr.K.Asrar Ahmed, Assistant Professor (Senior Grade)
Technical Staff : Mr.N.Mohamed Mydeen, Selection Grade Instructor,
Mr.R.Syed Ali, Selection Grade Technician
List of Equipments
S.No | Equipments Name | Specification
1 Friction Factor in Pipes 0 – 40 LPM
2 Minor Losses in Pipe 0 – 40 LPM
3 Venturimeter / Orifice Meter 0 – 900 LPM
4 Jet Pump 1 H.P / 220 – 240 V A.C
5 Vane Pump 2 H.P / 400 – 440 V A.C
6 Gear Pump 2 H.P / 400 – 440 V A.C
7 Centrifugal Pump (Single Speed) 0.5 H.P / 400 – 440 V A.C
8 Francis Turbine 15 H.P / 400 – 440 V A.C
9 Kaplan Turbine 20 H.P / 400 – 440 V A.C
10 Submersible Pump 3 H.P / 400 – 440 V A.C
11 Pelton Turbine 15 H.P / 400 – 440 V A.C
12 "V" Notch 2 H.P / 400 – 440 V A.C
13 Open Mouth piece 1 H.P / 220 – 240 V A.C
14 Orifice 1 H.P / 220 – 240 V A.C
15 Centrifugal Pump (Variable speed) 0.5 H.P / 220 – 240 V A.C
16 Reciprocating Pump 0.5 H.P / 220 – 240 V A.C
17 Impact of Jet on vanes 1 H.P / 220 – 240 V A.C
18 Reynold's Apparatus 1.5 H.P / 220 – 240 V A.C
19 Bernoulli's Apparatus 0.5 H.P / 220 – 240 V A.C
20 Rota Meter 0 – 80 LPM
21 Metacentric Height
Area: 230 Sq.m
Crescent
DEPARTMENT OF MECHANICAL ENGINEERING
FLUID MECHANICS AND MACHINERY LAB
LIST OF EXPERIMENTS
1. Comparison of Coefficient of Discharge of given Orifice/ Venturi/ Rotameter.
2. Determination of Friction Factor for given set of pipes.
3. Determination of Minor Losses in pipes flow.
4. Flow measurement through V-notch
5. Flow measurement through Mouth piece / Open orifice.
6. Verification of Bernoulli's theorem.
7. Flow Visualization: Laminar or Turbulent.
8. Performance study of Centrifugal Pumps/ Reciprocating Pump.
9. Performance Study of Submersible / Jet Pump.
10. Performance Study of Vane / Gear Pumps.
11. Determination of Impact of Jet on flat and curved vanes.
12. Determination of maximum power at constant speed / constant load on Impulse turbine.
13. Performance characteristics of Reaction turbine.
14. Performance characteristics of Kaplan turbine.

Thermal Lab

Manufacturing Practice Lab (First Year)

LESSON PLAN

1. Course Title	**:**	**Engineering Graphics**
2. Course Code	**:**	**GED 1101**
3. Course Coordinator	**:**	**M. A. Sai Balaji**
4. Theory / Practical	**:**	**Theory**
5. Semester	**:**	**01**
6. Academic Year	**:**	**2022-2023**
7. Department	**:**	**Mechanical Engineering**
8. No. of Credits	**:**	**3**

9. Course Learning Objectives:

COB1: To introduce the basic concepts of engineering drawing, and familiarize with conic sections, special curves and orthographic projection of points and straight lines
COB2: To get practical exposure on projection of planes and solids
COB3: To be familiar with sectioning of solids, and development of surfaces
COB:4 To conversant with 3D isometric projection, and perspective projection of simple solids
COB 5: To introduce computerized drafting using CADD for drawing the orthographic views of simple solids

10. Course pre-requisites: Higher secondary

11. Schedule of teaching and learning

Sl.No.	Period	Topic	Mode of delivery	Teaching Aids	Reference / Source

[Furnished as Annexure-1]

12. Course material and References

1. N.D. Bhatt, “Engineering Drawing”, Charotar Publishing house, 53rd Edtion, 2014.
2. Venugopal. K, and V. Prabhu Raja, “Engineering Graphics”, New Age International (P) Ltd., Publication, Chennai, Edition 15, 2017.
3. K.V. Natarajan, “A text book of Engineering Graphics”, Dhanalakshmi publishers, Chennai, 31st Edition, 2018.
4. Agrawal B. & Agrawal C. M., “Engineering Graphics”, TMH Publication, 2012.
5. Jeyapoovan, T., “Engineering Graphics using AutoCAD”, Vikas Publishing House Pvt. Ltd., New Delhi, 2015.
6. AutoCAD Software Theory and User Manuals
7. Engineering graphics You tube Lecture videos link: https://www.youtube.com/user/BSAUNIV/videos

13. Assessment Scheme:

	Continuous Assessment	**Tutorial**	**Total % of weightage**
I	50%	50%	100%
II	50%	50%	100%
Internal (I + II) /4			50%
End Semester Examination (100/2)			50%

i) Periodical Assessments

Each Assessment will be evaluated and the 50% weightage of marks will be added in the Internal marks.

Continuous Assessment 1 (50 marks)

- Drawing instruments, dimensioning, BIS conventions, types of lines, simple geometric constructions.
- Conic sections: ellipse, parabola, hyperbola
- Special curves: Cycloid, epicycloid, hypocycloid, involutes, helix
- Orthographic projection – first angle, third angle projections, principle, orthographic, projection of points and simple machine components.
- Projection of straight lines in first quadrant – true length and true inclinations – traces.
- Projection of plane lamina in first quadrant.

- Projection of solids: prism, pyramid, cone, cylinder – Axis inclined to one reference plane only - Change of position method.

Continuous Assessment 2 (50 marks)

- Section of solids: prism, pyramid, cone, cylinder, and sphere – sectional view – true shape .Solids in simple position and cutting plane inclined to one reference plane only.
- Development of surface of truncated solids: prism, pyramid, cone cylinder – frustum of cone and pyramid.
- Isometric scale – Isometric projection, view of prism, pyramid, cylinder, cone, frustums, truncated solids and simple machine components.
- Perspective projection of prism, pyramid, cylinder, frustums – Visual ray method.

ii) Tutorials / Assignment

Each continuous assessment test has one tutorial (which covers TWO Modules) in that test portion. Each student has to complete the tutorial problems and submit with in the deadline. Each tutorial will be evaluated and the 50% weightage of marks will be added in the internal marks.

14. Expected outcome of the course:

After completion of the course, students should be able to

CO1: identify the specifications and standards of technical drawing and draw conic sections, special curves and orthographic projection of points and straight lines

CO2: apply the concept of orthographic projection to draw the orthographic views of plane figures and simple solids

CO3: draw the sections of solids and development of solid surfaces

CO4: apply the concept of isometric and perspective projection to draw the 3-D views of simple solids

CO5: draw the orthographic views of simple objects using drafting software

15. Mapping of course outcomes with learning activities and assessments

Course outcomes	Learning activities	Assessments	CAT I * %	CAT II * %	End Sem * %
1. Identify the specifications and standards of technical drawing and draw conic sections, special curves and orthographic projection of points and straight lines	• Students solve the problems related to the contents • Solve real life examples	• Assignments • Practical tutorials • Continuous Assessment test • Semester End Exam	**50**	**0**	**20**
2. Apply the concept of orthographic projection to draw the orthographic views of plane figures and simple solids	• Students solve the problems related to the contents	• Assignments • Practical tutorials • Models • Continuous Assessment test • Semester End Exam	**50**	**0**	**20**
3. Draw the sections of solids and development of solid surfaces	• Students solve the problems related to the contents • Solve real life examples	• Assignments • Practical tutorials • Continuous Assessment test • Semester End Exam	**0**	**50**	**20**
4. Apply the concept of isometric and perspective projection to draw the 3-D views of simple solids	• Students solve the problems related to the contents	• Assignments • Practical tutorials • Continuous Assessment test • Semester End Exam	**0**	**50**	**20**
5. Draw the orthographic views of simple objects using drafting software	• Students emphasis on free hand sketching	• Assignments • Practical tutorials • Continuous Assessment test • Semester End Exam	**0**	**0**	**20**

***% of marks in the question paper relevant to the respective outcomes**

ANNEXURE -1
Schedule of Teaching and Learning

S. No	Period	Topic	Mode of Delivery	Teaching Aids	Reference / Source
1	2	**Module I: BASICS, ENGINEERING CURVES AND ORTHOGRAPHIC PROJECTION OF POINTS AND STRAIGHT LINES** Drawing instruments, dimensioning, BIS conventions, types of lines, simple geometric constructions.	Lecture	Chalk /black board	R1,R2 & R3
2	2	Conic sections : ellipse, parabola	Lecture	Chalk /black board	R1,R2 & R3
3	2	Hyperbola, Special curves : Cycloid, epicycloid	Lecture	Chalk /black board	R1,R2 & R3
4	2	Hypocycloid, involutes	Lecture	Chalk /black board	R1,R2 & R3
5	2	Orthographic projection – first angle, second angle, third angle and fourth angle projections. Orthographic projection of points in all quadrants	Lecture	Chalk /black board	R1,R2 & R3
6	2	Projection of straight lines in first quadrant – true length and true inclinations	Lecture	Chalk /black board	R1,R2 & R3
7	2	Traces of straight line.	Lecture	Chalk /black board	R1,R2 & R3
8	2	**MODULE II: PROJECTION OF PLANES AND SOLIDS** Projection of plane lamina in first quadrant and its traces	Lecture	Chalk /black board	R1,R2 & R3
9	2	Projection of plane lamina in first quadrant and its traces	Lecture	Chalk /black board ,Models	R1,R2 & R3

10	2	Projection of Prism in first quadrant: Axis inclined to one reference plane only	Lecture	Chalk /black board, Models	R1,R2 & R3
11	2	Projection of Pyramid in first quadrant: Axis inclined to one reference plane only	Lecture	Chalk /black board ,Models	R1,R2 & R3
12	2	Projection of Cone in first quadrant: Axis inclined to one reference plane only	Lecture	Chalk /black board ,Models	R1,R2 & R3
13	2	Projection of Cylinder in first quadrant: Axis inclined to one reference plane only	Lecture	Chalk /black board ,Models	R1,R2 & R3
14	2	Change of position method	Lecture	Chalk /black board, Models	R1,R2 & R3
15	2	**MODULE III: SECTION OF SOLIDS AND DEVELOPMENT OF SURFACES** Section of prism and pyramid – sectional view – true shape of section – cutting simple position	Lecture	Chalk /black board,	R1,R2 & R3
16	2	Section of cone and cylinder – sectional view – true shape of section – cutting simple position	Lecture	Chalk /black board	R1,R2 & R3
17	2	Development of surface of prism, pyramid	Lecture	Chalk /black board	R1,R2 & R3
18	2	Development of surface of cone and cylinder	Lecture	Chalk /black board	R1,R2 & R3
19	2	Frustum of cone, pyramid and simple sheet metal parts	Lecture	Chalk /black board	R1,R2 & R3
20	2	**MODULE IV: THREE DIMENSIONAL PROJECTIONS** Isometric projection: Isometric scale – isometric axes- Isometric projection and view of prism	Lecture	Chalk /black board	R1,R2 & R3

21	2	Isometric projection and view of pyramid, cylinder, cone and frustums	Lecture	Chalk /black board	R1,R2 & R3
22	2	Perspective projection: station point – vanishing point – Perspective projection and views of prism by Visual ray method.	Lecture	Chalk /black board	R1,R2 & R3
23	2	Perspective projection: station point – vanishing point – Perspective projection and views of pyramid by Visual ray method.	Lecture	Chalk /black board	R1,R2 & R3
24	2	**MODULE V: ORTHOGRAPHIC PROJECTION USING CADD** Introduction to Orthographic projection - Sketching orthographic views of simple solids	Lecture	Chalk /black board	R5 & R6
25	2	Sketching orthographic views of simple solids	Lecture	Chalk /black board	R5 & R6
26	2	Sketching orthographic views of machine parts	Lecture	Chalk /black board	R5 & R6
27	2	Sketching orthographic views of machine parts	Lecture	Chalk /black board	R5 & R6
28	2	Introduction to CADD - Basic commands for sketching.	Lecture	Autocad Software	R5 & R6
29	2	Editing sketches - creating texts and tables	Lecture	Autocad Software	R5 & R6
30	2	Basic dimensioning and editing dimensions – Plotting drawings	Lecture	Autocad Software	R5 & R6