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DR. D. Y. PATIL BIOTECHNOLOGY & BIOINFORMATICS INSTITUTE

TATHAWADE, PUNE

SYLLABUS FOR

SEMESTER I

B. TECH BIOTECHNOLOGY, B. TECH MEDICAL BIOTECHNOLOGY, M. TECH (INT.) BIOTECHNOLOGY

(BATCH 2018-19)

DR. D.Y. PATIL VIDYAPEETH, PUNE
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TATHAWADE, PUNE

**B. TECH BIOTECHNOLOGY, B. TECH MEDICAL BIOTECHNOLOGY, M. TECH
(INT.) BIOTECHNOLOGY**

Academic year 2018-2019

SEMESTER I						
Course Code	**Course Name**	**L**	**T**	**P**	**Hr**	**Cr**
BS 101	Physics	3	0	2	5	4
BS 102	Chemistry	3	0	4	7	5
BT 101	Electronics & Instrumentation Engineering	3	0	2	5	4
BI 101	Computers & C Programming	3	0	4	7	5
HU 101	Communication Skills	1	2	0	3	3
BS 103	Maths I – Mathematics	3	1	0	4	4
BT 102	Engineering Graphics	2	0	2	4	3
HU 102	Disaster Management*	0	1	0	1	-
Total		**18**	**4**	**14**	**36**	**28**
*Audit course, attendance is must						

TITLE OF THE COURSE: ENGINEERING GRAPHICS
COURSE CODE: – BT 102   **L T P Hr C**

MARKS: 50   **2 0 2 4 3**

OBJECTIVE OF THE COURSE:
Objective of the course are
Learn basic engineering drawing formats.
Learn to take data and transform it into graphics drawings.
Learn to sketch and take field dimensions.

LEARNING OUTCOME
At the end of this course student should be able to improve basic sketching technique, able to draw orthographic projections and section.

PREREQUISITES
Since the course is very basic in nature, knowledge of mathematics is required.

COURSE DESCRIPTION

Sr. No.	Topic	Description	Hrs
1.	Drafting Technology and Introduction to Any Drafting Software/Package	Layout of drawing sheets, sizes of drawing sheets, different types of lines used in drawing practice, Dimensioning – linear, angular, aligned system, unidirectional system, parallel dimensioning, chain dimensioning, location dimension and size dimension. Tolerances – methods of representing tolerances, unilateral and bilateral tolerances, tolerance on linear and angular dimensions, geometrical tolerances. Symbols used on drawing, surface finish symbols, welding symbols. Advantages of using Computer Aided Drafting (CAD) packages, applications of CAD, basic operation of drafting packages, use of various commands for drawing, dimensioning, editing, modifying, saving and printing/plotting the drawings. Introduction to 3D primitives.	2
2.	Curves used in Engineering Practice	Ellipse, Parabola, Hyperbola, normal and tangents to these curves, Involute, Cycloid, Epi-cycloid, Hypo-cycloid, Archimedean Spiral, Helix on cone and cylinder.	10
3.	Orthographic Projections	Reference planes, types of orthographic projections – First angle projections, Third angle projections, methods of obtaining orthographic view s by First angle method,	7

		Sectional orthographic projections – full section, half section, offset section.	
4	Auxiliary Projections	Auxiliary planes – Auxiliary Vertical Plane (AVP), Auxiliary Inclined Plane (AIP), symmetrical auxiliary view, unilateral auxiliary view, bilateral auxiliary view.	2
5.	Isometric Projections	Isometric view, Isometric scale to draw Isometric projection, Non-Isometric lines, and construction of Isometric view from given orthographic views and to construct Isometric view of a Pyramid, Cone, and Sphere.	7
6.	Interpretation of Given Views/Missing Views	Identification of lines/edges and surfaces, visualization of given orthographic views, adding a missing/third view, adding a sectional view, to convert a given view in to a sectional view.	2
Total number of Lectures			**30**

METHODOLOGY
The course would be taught through lectures, demonstrations and practicals.

EVALUATION SCHEME (THEORY)

Examination	Duration	Marks
Internal examination	45 minutes	15
Attendance		5
End Semester Exam	1 hours 15 minutes	30
Total		**50**

BOOKS RECOMMENDED:
1. Elementary Engineering Drawing, by D. Bhatt, 53rd edition, Chartor Publishing house, 2014.
2. Engineering Drawing by P.S. Gill, S.K. KAtaria & sons, 2009.
3. Engineering Graphics and Drafting by P.S. Gill, S.K. KAtaria & sons, 2009.
4. Machine Drawing by N.D. Bhatt, 50th Edition, Chartor Publishing house, 2014.

PRACTICAL IN ENGINEERING GRAPHICS   (2 Hrs. PER WEEK)   MARKS 50

Five A2 (594X420mm) (Half imperial) size drawing sheet as detailed below:
1. Sheet No. 1: CURVES
   o To draw any four curves mentioned in the detailed syllabus.
2. Sheet No. 2: ORTHOGRAPHIC VIEWS
   o To draw two principal views, one sectional view for two objects.
3. Sheet No. 3: AUXILIARY VIEWS
   o To draw auxiliary views from the given views for any two objects.
4. Sheet No. 4: ISOMETRIC VIEWS
   o Two problems on Isometric views.
   o *(minimum one problem by using CAD software/package)*
5. Sheet No. 5: INTERPRETATION OF GIVEN VIEWS/MISSING VIEWS
   o Two problems on Interpretation of given views.
   o *(minimum one problem by using CAD software/package)*