INSTITUTE	**DIPLOMA STUDIES**
PROGRAM	**DIPLOMA ENGINEERING (MECHANICAL ENGINEERING)**
SEMESTER	**5**
COURSE TITLE	**3D MODELLING SOFTWARE**
COURSE CODE	**09ME1504**
COURSE CREDITS	**2**

Objective:

1 The course objective is to teach the students the basic commands necessary for professional 3D CAD drawing, design, and drafting using software Creo parametric 2.0. For this course students requires basics knowledge of 2D sketching of any tool so they can progress quickly through this course which is arranged in a sequence that is easy to understand.

Course Outcomes: After completion of this course, student will be able to:

1 Draw any 2D view of the object.
2 Develop the skill & knowledge in 3D Modelling
3 Develop the skill of advance 3D Modelling
4 Develop the skill & knowledge in Assembly Modelling

Pre-requisite of course:NA

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
0	0	4	0	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	**INTRODUCTION TO CREO PARAMETRIC** System Requirements, Getting Started with Creo Parametric, Important Terms and Definitions, File Menu Options, Managing Files, Menu Manager, Model Tree, Understanding the Functions of the Mouse Buttons, Ribbon Toolbars, Navigator, Creo Parametric Browser	0

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Contents : Unit	Topics	Contact Hours
2	**SKETCH MODULE** Working with the Sketch Mode, the Sketcher Environment, drawing a Sketch Using tools available in the Sketch Tab, placing a Point, drawing a Line, Centre line, Rectangle, Circle, Ellipse, Arc etc, Dimensioning the Sketch, Dimensioning the Basic Sketched Entities, Working with Constraints, Editing in sketch, Dimensioning the Sketch using base line, Creating fillets and chamfers, Reference Coordinate System, Working with Splines, Writing Text in the Sketcher Environment, Rotating and Resizing Entities, Importing 2D Drawings in the Sketch Mode	0
3	**BASICS OF 3D** Creating base features, the datum plan selection, extrude and revolve feature for basic part, parent-child relationship, Datum options (creating new datum plane, datum point, datum axes)	0
4	**CONSTRUCTION OF SOLID** Aiding options for part construction: creating hole, round edge, chamfer, ribs, editing features of model: mirror, move, select, copy, Creating pattern, Creating advance modeling features: sweep, blend, shell, swept blend, helical sweep, blend section to surfaces, blend between surfaces etc	0
5	**ASSEMBLY MODELING** Understanding top-down and bottom-up approaches of assembly, understating assembly constrain, create assembly of components, modifying components of an assembly, creating exploded view, bill of material	0
6	**DRAWING VIEWS** The drawing mode understanding, generating drawing views (general, projection, detailed, sectional etc), editing drawing views, modifying drawing view features, dimensioning drawing views, adding notes, adding tolerances, modifying and editing dimensions.	0
Total Hours		**0**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Tutorial 1 to 3** 2D sketches	14
2	**Tutorial 4 to 8** 3D modelling	26
3	**Tutorial 9 to 10** Assembly modelling	16
Total Hours		**56**

Textbook :

1 Creo Parametric 9.0 Tutorial, Roger Toogood, SDC Publication, 2022

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References:

1 Designing with Creo Parametric 9.0, Designing with Creo Parametric 9.0, Michael J. Rider, SDC Publication, 2022

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking**
30.00	40.00	30.00			

Instructional Method:

1 The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory.

2 Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Supplementary Resources:

1 https://www.ptc.com/en/ptc-university/training-catalogs/creo-training

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