ANNEXURE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU
DIPLOMA IN ENGINEERING / TECHNOLOGY SYLLABUS
M-SCHEME
(Implements from the Academic year 2015-2016 onwards)

Course Name : All branches of Diploma in Engineering and Technology and Special Programmes except DMOP, HMCT and film & TV.
Subject Code : 30026
Semester : II Semester
Subject Title : ENGINEERING GRAPHICS – II

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per semester: 15 weeks

<table>
<thead>
<tr>
<th>Subject</th>
<th>Instructions</th>
<th>Examination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hrs / Week</td>
<td>Hrs / Semester</td>
</tr>
<tr>
<td>ENGINEERING GRAPHICS - II</td>
<td>6</td>
<td>90</td>
</tr>
</tbody>
</table>

Topics and Allocation of Hours

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Topics</th>
<th>Time (Hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Constructions of special curves,</td>
<td>18 Hrs.</td>
</tr>
<tr>
<td>2</td>
<td>Development of surfaces</td>
<td>21 Hrs.</td>
</tr>
<tr>
<td>3</td>
<td>Projection of solids, Section of Solids</td>
<td>27 Hrs</td>
</tr>
<tr>
<td>4</td>
<td>Isometric projections</td>
<td>24 Hrs.</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>90 Hrs.</td>
</tr>
</tbody>
</table>

RATIONALE:

Engineering graphics is a basic subject for all branches of Diploma Engineering and Technology. Since engineering drawing is considered as the language of engineers, the proper understanding and practice is required with proper instruments.

This subject is aimed at providing basic understanding of the fundamentals of Engineering Drawing; mainly visualization, graphics theory, standards & conventions of drawing, the tools of drawing and the use of Drawings in engineering applications.
The topics covered are based on the syllabus for Diploma studies in engineering. The subject is planned to include sufficient practices which would help the student in visualization of three dimensional objects and developing the drawing.

The chapters are arranged in sequence and starts from the basic concepts of constructions of special curves and polygons, proceeds to the principles of projection solids and section of solids. By the end of the subject it is expected that the students would be matured to visualize any engineering component by reading an engineering drawing.

OBJECTIVES:
At the end of the practice, the students will be able to,

- Understand the importance of drawing.
- Identify and uses of the drawing instruments.
- Acquire knowledge about the construction of special curves.
- Draw the development of solids and objects.
- Draw the projection and sectional views of solids and true shape.
- Construct orthographic views into isometric drawings.

### 30026 ENGINEERING GRAPHICS – II
DETAILED SYLLABUS

**Contents: Theory**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Name of the Topic</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1.1 Constructions of special curves</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Involutes of a circle - Archimedean spiral – helix – exercises.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.2 Construction of Polygon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construct triangle, rectangle, pentagon and hexagon by side distance in various positions – construction by inscribe &amp; circumscribe a circle and by angle.</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>2.1 Development of surfaces</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Development of truncated prism and cylinder, frustum of pyramid and cone.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Development of miscellaneous objects - T-pipe, elbow, ducts, tray, lamp shade and funnel.</td>
<td></td>
</tr>
</tbody>
</table>
| III | 3.1 Projection of solids  
Introduction - important terms - classification of solids – polyhedron –  
solids of revolution – exercises in triangular and hexagonal prisms -  
triangular and hexagonal pyramids - cylinder and cone.  
Projections of solids in simple positions – Axis parallel to one plane and  
perpendicular to other plane - axis inclined to one plane and parallel to  
other plane - axis parallel to both planes - exercises.  
| 27 |
| 3.2 Section of Solids  
Introduction – terminology - true shape - sectional view - need for sectional  
view - cutting plane – section lines - triangular and hexagonal prisms and  
pyramids - cylinder and cone.  
Position of solids – Axis parallel to one plane and perpendicular to other  
plane - axis parallel to both planes - exercises.  
Position of cutting planes – cutting plane perpendicular to one plane and  
parallel to another plane - cutting plane perpendicular to one plane and  
inclined to another plane – exercises.  
| 1 |
| IV | 4.1 Isometric projections  
Introduction – isometric view - isometric projection – methods of drawing  
an isometric view - box method – isometric view of regular solids –  
isometric view of truncated solids - Isometric view of arcs and circles – four  
centre method for drawing an ellipse - arcs of circles in isometric view.  
Isometric view of the machine parts from the given simple orthographic  
view - exercises.  
| 24 |

**Text Books**


**Reference Books**

Board Examination – Question pattern

Time: 3 Hrs.                                      Max.Marks: 75

[Note: Answer all the questions in the drawing sheet only. Assume missing dimensions suitably]

Part A
Answer all questions. Each question carries five marks. 3 X 5 = 15

Note: Three questions will be asked. (1 to 3). One question each from UNIT I, II and III.
[Construction of polygon, Development of regular polygon and Projection of solids (axis perpendicular to one plane)].

Part B
Answer any four questions. Each question carries fifteen marks. 4 X 15 = 60

Note: Six questions will be asked. Minimum one question from each unit.

TOTAL 75

Internal Marks

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment drawings</td>
<td>-</td>
</tr>
<tr>
<td>Test</td>
<td>-</td>
</tr>
<tr>
<td>Attendance</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

Total - 25