

**REFERENCE BOOKS:**

1. **Computer Graphics**, Xiang z, Plastock, R. A., Schaums outlines, McGraw Hill. 2007.
2. **Computer Graphics, principles and practice**, .Foley, Van- Damn, Finner and Hughes, Addison Wesley. 2000
3. **Computer Graphics**, Sinha A. N., Udai A. D., Tata McGraw Hill, 2008.
4. **Computer Graphics**, C Version- Doneld Heran, M. Pauline Baker, 2<sup>nd</sup> Edition, Pearson.

**RAPID PROTOTYPING**

<b>Subject Code</b>	<b>: 10ME837</b>	<b>IA Marks</b>	<b>: 25</b>
<b>Hours/Week</b>	<b>: 04</b>	<b>Exam Hours</b>	<b>: 03</b>
<b>Total Hours</b>	<b>: 52</b>	<b>Exam Marks</b>	<b>: 100</b>

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**PART – A****UNIT - 1**

**Introduction:** Need for the compression in product development, history of RP systems, Survey of applications, Growth of RP industry, and classification of RP systems.

**Stereo Lithography Systems:** Principle, Process parameter, Process details, Data preparation, data files and machine details, Application.

**07 Hours**

**UNIT - 2**

**Selective Laser Sintering:** Type of machine, Principle of operation, process parameters, Data preparation for SLS, Applications.

**Fusion Deposition Modelling:** Principle, Process parameter, Path generation, Applications.

**07 Hours**

**UNIT - 3**

**Solid Ground Curing:** Principle of operation, Machine details, Applications. Laminated Object Manufacturing: Principle of operation, LOM materials. Process details, application.

**06 Hours**

#### **UNIT - 4**

**Concepts Modelers:** Principle, Thermal jet printer, Sander's model market, 3-D printer. Genisys Xs printer HP system 5, object Quadra systems.

**06 Hours**

### **PART – B**

#### **UNIT - 5**

**Rapid Tooling:** Indirect Rapid tooling, Silicon rubber tooling, Aluminium filled epoxy tooling, Spray metal tooling, Cast kirksite, 3Q keltool, etc. Direct Rapid Tooling Direct. AIM.

**06 Hours**

#### **UNIT - 6**

**Rapid Tooling:** Quick cast process, Copper polyamide, Rapid Tool, DMILS, Prometal, Sand casting tooling, Laminate tooling soft Tooling vs. hard tooling.

**06 Hours**

#### **UNIT - 7**

**Software For RP:** STL files, Overview of Solid view, magics, imics, magic communicator, etc. Internet based software, Collaboration tools.

**06 Hours**

#### **UNIT - 8**

**Rapid Manufacturing Process Optimization:** factors influencing accuracy. Data preparation errors, Part building errors, Error in finishing, influence of build orientation.

**08 Hours**

#### **TEXT BOOKS:**

1. **Stereo Lithography and other RP & M Technologies**, Paul F. Jacobs: SME, NY 1996.
2. **Rapid Manufacturing**, Flham D.T & Dinjoy S.S Verlog London 2001.

#### **REFERENCE BOOKS:**

1. **Rapid Prototyping**, Terry Wohlers Wohler's Report 2000" Wohler's Association 2000.
2. **Rapid Prototyping Materials**, Gurumurthi, IISc Bangalore.
3. **Rapid Automated**, Lament wood. Indus press New York