

Year & Sem: E2S1	Course Code: ME2104	Course Name: <b>Manufacturing Processes</b>	No. of Credits: 4	L 2	T&PS 2	P 0
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**UNIT-I: Casting process:** Types of foundries, steps in making a casting; cast metals; types, materials and allowances of patterns;

**UNIT-II:** Moulding processes and their characteristics; moulding materials; gating and riser design; melting furnaces; casting defects.

**UNIT-III: Welding** welding processes, welding energy sources and their characteristics; fluxes and coatings; weldability.

**UNIT-IV:** Welding of various metals and alloys; metallurgical characteristics of welded joints; Weld testing and inspection.

**UNIT-V: Forming** Classification of metal forming processes; basic metal working concepts and plasticity; yield criterion; slip line fields; estimation of force and energy requirements

**UNIT-VI:** Technology of bulk and sheet metal forming processes; precision forming processes; various features of different types of metal forming dies; principles of powder forming.

**References/Textbooks:**

- 1 “Manufacturing Technology: Foundry, Forming and Welding” by Rao P. N.
- 2 “Introduction to Manufacturing Processes” by Schey J
- 3 “Manufacturing Process for Engineering Materials” by KALPAKJAIN

**Lecture Plan:** Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations.

**Video Lectures (Web Links):**

- 1.
- 2.

**Study Materials (Web Links):**

- 1.
- 2.

**Problems & Solutions (Web Links):**

- 1.
- 2.

**Assignments (Web Links):**

- 1.
- 2.