

| Discipline : Metallurgy | | | | | | | |
|-------------------------|---|----------|----------------------------|---|--------------------|--------------------------------------|--|
| Sl. No. | Academic Course | Semester | Subject under the Semester | Topic of the BIS Lecture | Time slot required | IS No. | Title |
| 1 | B.E/B.Tech Metallurgical and Materials Engineering | | Manufacturing Processes | Standardization in the field of Foundry | 90 Mins | IS 1918 | Methods of physical tests for foundry sands |
| | | | | | | IS 3018 | Specification for standard silica sand for raw material testing in foundries |
| | | | | | | IS 11099 | Specification for universal sand testing machines |
| | | | | | | IS 10032 | Organic no bake Self Setting binders for use in foundries - Specification |
| | | | | | | | |
| | | | | | | IS 1513 | Specification for wooden pattern equipment for foundries |
| | | | | | | IS 9139 | Specification for malleable iron shots and grits for use in foundries |
| | | | | | | IS 8780 | Non Destructive tetsing of steel castings-Code of practice |
| 2 | B.E/ B.Tech Metallurgical and Materials Engineering | | Metal Casting and Joining | Standradization in the field of Welding | 90 Min | IS 813 (Part 1) : 2018/ISO 2553:2013 | Welding and Allied Processes Symbolic Representation on Drawings-Welded Joints |
| | | | | | | IS 816 : 1969 | Code of practice for use of metal arc welding for general construction in mild steel |
| | | | | | | IS 822 : 1970 | Code of procedure for inspection of welds |
| | | | | | | | |
| | | | | | | IS 1278 : 1972 | Specification for filler rods and wires for gas welding |
| | | | | | | IS 4972 : 1968 | Specification for resistance spot - Welding electrodes |

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| | | | | | | IS 5206 : 1983 | Specification for covered electrodes for manual metal arc welding of stainless steel and other similar high alloy steels |
| | | | | | | IS 5511 : 1991 | Covered electrodes for manual metal arc welding of cast iron - Specification |
| | | | | | | IS 814 | Covered electrodes for manual metal arc welding of carbon and carbon manganese steel - Specification Sixth Revision |
| | | | | | | IS 15769 | Flux cored Tubular electrodes for gas shielded and self - Shielded metal welding of carbon or carbon - Manganese steel |
| | | | | | | IS 1395 | Specification for low and medium alloy steel covered electrodes for manual metal arc welding Third Revision |
| | | | | | | IS 5856 | Welding consumables - Wire electrodes strip electrodes wires and rods for arc welding of stainless and heat resisting steels - Classification Second Revision |
| | | | | | | IS 15327 : 2018/ISO 14731:2006 | Welding coordination - Tasks and responsibilities |
| | | | | | | IS 3658: 1999 | Code of practice for liquid penetrant flaw testing |
| | | | | | | IS 3703: 2004 | Recommended practice for magnetic particle flaw detection |
| | | | | | | IS 5334 : 2014 | Magnetic particle flaw detection of welds - Code of practice |
| 3 | B.E/ B.Tech Metallurgical and Materials Engineering | | Mechanical Behaviour of Materials | Indian Standards on Mechanical testing of Metals | 90 minutes | IS 1608 (Part 1)/ISO 6892-1 | Metallic materials - Tensile testing Part 1 method of test at room temperature |
| | | | | | | IS 5242 | Method of test for determining shear strength of metals |
| | | | | | | IS 1500 (Part 1) /ISO 6506-1 | Metallic materials - Brinell hardness test: Part 1 test method |
| | | | | | | IS 1586 (Part 1) / ISO 6508-1 | Metallic Materials – Rockwell hardness test: Part 1 test method |
| | | | | | | IS 6885 (Part 1) / ISO 4545-1 | Metallic Materials — Knoop Hardness Test Part 1 Test Method |

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| | | | | | | IS 1501 (Part 1) /ISO 6507-1 | Metallic Materials — Vickers Hardness Test Part 1 Test Method |
| | | | | | | IS 1757 (Part 1) /ISO 148-1 | Metallic Materials — Charpy Pendulum Impact Test Part 1 Test Method |
| | | | | | | IS 1598 | Method for izod impact test of metals |
| | | | | | | | |
| 4 | IIT Madras B tech Metallurgical and materials engineering | | Microscopy and Microanalysis of Materials | Indian standards Metallography and Heat Treatment | 90 minutes | IS 1956 (Part 1) : 1976 | Glossary of terms relating to iron and steel: Part 1 general metallurgy, heat treatment and testing (First Revision) |
| | | | | | | IS 4748 : 2021 ISO 643 : 2019 | Steel - Micrographic determination of the apparent grain size |
| | | | | | | IS 6416 : 2022 | Method for measuring case-depth of steel |
| | | | | | | IS 7739 (Part 1) : 1975 | Code of practice for preparation of metallographic specimens: Part 1 general features |
| | | | | | | IS 7739 (Part 5) : 1976 | Code of practice for preparation of metallographic specimens: Part 5 iron and steel and their examination |

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| | | | | | | IS 7754 : 1975 | Method for designation of the microstructure of graphite in cast iron |
| | | | | | | IS 6396 : 2000 | Methods of measuring decarburized depth of steel |
| | | | | | | IS 4163 : 2021 ISO 4967:2013 | Steel - Determination of content of non-metallic inclusions - Micrographic method using standard diagrams |
| | | | | | | IS 12037 : 1987 | Specification for macrographic examination of steel by sulphur print (Baumann Method) |
| | | | | | | IS 11371 : 2022 | Method for macroetch testing inspection and rating of wrought steel products |