

Department of **Materials and Metallurgical Engineering**
Undergraduate – Materials and Metallurgical Engineering
FACULTY OF INDUSTRIAL TECHNOLOGY
INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)

Smt	Code	Courses	Credits
1	IG1101	Islam Education*	2
1	IG1102	Protestant Education*	2
1	IG1103	Catholic Education*	2
1	IG1104	Hindu Education*	2
1	IG1105	Buddha Education*	2
1	IG1108	English	3
1	IG1110	Khonghucu Education*	2
1	SM1203	Calculus I	3
1	TL1214	Physics I	2
1	TL1217	Chemistry	2
1	TL1315	Technical & Machinery Drawing	3
1	TL1316	Introduction to Materials and Metallurgy Engineering	2
2	IG1106	Concept of Nationalism	3
2	IG1107	Concept of Scientific Technology and Communication	3
2	SM1204	Calculus II	3
2	TL1224	Physics II +	3
2	TL1325	Engineering Mechanics	2
2	TL1326	Occupational Safety and Health	2
2	TL1327	Analytical Chemical +	3
3	TL1331	Basic Computer Programming	2
3	TL1332	Material Mechanical Behavior	3
3	TL1333	Mechanical Element	3
3	TL1334	Statistics & Experiment Planning	3
3	TL1335	Metallurgy I+	3
3	TL1336	Engineering Mathematics	4
3	TL1337	Power Tool	2
4	TL1341	Metallurgy II	3

Smt	Code	Courses	Credits
4	TL1342	Material Thermodynamics	3
4	TL1343	Engineering Economics	2
4	TL1344	Manufacture Processing +	3
4	TL1345	Phase Diagram Transformation	2
4	TL1346	Electronics and Instrumentation	2
4	TL1347	Electrochemistry	2
5	IG1109	Technopreneurship	3
5	TL1351	Transport Phenomena I	3
5	TL1352	Cast Technology	3
5	TL1353	Material Characterization	3
5	TL1354	Iron and Steel Formation Processing	2
5	TL1355	Numerical Analysis and Modeling	3
6	TL1361	Deformation and Formation Processing	3
6	TL1362	Welding Technology	3
6	TL1363	Transport Phenomena II	3
6	TL1364	Purification and Metallurgy Extraction	3
6	TL1365	Heat Treatment	3
6	TL1366	Polymer Material	3
7	TL1371	Failure Analysis and Fracture Mechanics	3
7	TL1372	Finite Element Method	3
7	TL1373	Corrosion and Corrosion Control	3
7	TL1374	Ceramic and Glass Material	3
7	TL1375	Non Destructive Inspection and Risk Based Inspection	3
7	TL1376	Practical Work	2

Smt	Code	Courses	Credits
8	TL1381	Composite Material	3
8	TL1382	Operational Research and Production Management	2
8	TL1383	Industrial Process Design	2
8	TL1401	Advanced Material Strength**	3
8	TL1402	Computational Fluid Dynamics**	3
8	TL1403	Bio Material**	3
8	TL1404	Electronic Material**	3
8	TL1405	Wood Composite**	3
8	TL1406	Cryogenic Material**	3
8	TL1407	Magnetic Material**	3
8	TL1408	Optical Material**	3
8	TL1409	Refractory Material**	3
8	TL1410	Material for Maritime**	3
8	TL1411	Composite Mechanics**	3
8	TL1412	Manufacture Metallurgy**	3
8	TL1413	Powder Metallurgy**	3
8	TL1414	Super Alloy**	3
8	TL1415	Quality Control and Reliability**	3
8	TL1416	Coating Technology**	3
8	TL1417	Tribology**	3
8	TL1418	Molding Design**	3
8	TL1419	Microfabrication Technology**	3
8	TL1420	Conversion and Energy Storage Material**	3
8	TL1421	Special Topics**	3
8	TL1584	Final Project	6

* Select one of those with stars

** Elective courses