

Department of **Physics**  
Undergraduate - Physics  
FACULTY OF MATHEMATICS AND NATURAL SCIENCES  
**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	IG1110	Khonghucu Education*	2
1	SB1203	Biology	2
1	SF1301	Physics I	4
1	SK1201	Chemistry I	4
1	SM1301	Calculus I	4
2	IG1106	Concept of Nationalism	3
2	IG1108	English	3
2	SF1302	Physics II	4
2	SF1305	Physics III	2
2	SF1352	Introduction to Mathematical Physics	2
2	SM1302	Calculus II	4
3	IG1107	Concept of Scientific Technology and Communication	3
3	SF1321	Mechanics	4
3	SF1341	Thermodynamics	3
3	SF1353	Mathematical Physics I	4
3	SF1361	Fundamental Electronics I	3
3	SF1401	Introduction to Material Physics**	3
3	SF1411	Intelligent Instrument**	3
3	SF1423	Digital Image Processing**	3
3	SF1426	Introduction to Geology**	3
3	SF1439	Group Theory**	3

Smt	Code	Courses	Credits
4	SF1322	Modern Physics	4
4	SF1332	Wave & Optics	4
4	SF1354	Mathematical Physics II	4
4	SF1362	Fundamental Electronics II	3
4	SF1402	Physics of Metals**	3
4	SF1404	Physics of Polymers**	3
4	SF1412	Digital Electronics**	3
4	SF1420	Modern Optics**	3
4	SF1428	Earth Potentials Field Exploration**	3
4	SF1436	Introduction to Particle Physics**	3
5	SF1323	Quantum Physics	4
5	SF1333	Electromagnetic Field I	3
5	SF1371	Laboratory Physics	2
5	SF1403	Physics of Semiconductors**	3
5	SF1405	Physics of Ceramics**	3
5	SF1413	Control Instrumentation**	3
5	SF1415	Signal Processing**	2
5	SF1417	Electronics**	3
5	SF1419	Acoustics Electronics**	3
5	SF1421	Heat Transfer**	3
5	SF1425	Photonics**	3
5	SF1433	Seismic Exploration**	3
5	SF1441	Special Relativity Theory**	2
6	SF1334	Electromagnetic Field II	3
6	SF1342	Statistical Physics	3
6	SF1356	Computational Physics	4
6	SF1364	Physical Measurement Method	2

Smt	Code	Courses	Credits
6	SF1406	Physics of Composite Materials**	3
6	SF1408	Specto-micrography**	3
6	SF1414	Fluid Mechanics**	2
6	SF1416	Instrumentation Physics**	3
6	SF1422	Fiber Optics**	3
6	SF1430	Seismology**	4
6	SF1432	Geodynamics**	3
6	SF1434	Earth Electricity Exploration**	3
7	IG1109	Technopreneurship	3
7	SF1325	Nuclear Physics	4
7	SF1327	Solid Physics	4
7	SF1373	Seminar	2
7	SF1407	Crystal Diffraction**	3
7	SF1409	Corrosion**	3
7	SF1427	Optical Computing**	3
7	SF1431	Inversion Model**	3
7	SF1435	Well-Log Analysis**	3
7	SF1443	Advanced Mathematical Physics**	3
7	SF1445	Research Coop**	2
8	SF1410	Physics of Advanced Materials**	3
8	SF1418	Building Physics**	3
8	SF1424	Applied E.M.**	3
8	SF1442	Capita Selecta**	2
8	SF1444	Introduction to Renewable Energy**	2
8	SF1501	Final Project	6

\* Select one of those with stars

\*\* Elective courses