

## 2.2.7 Matrix and Curriculum Roadmap

**Table 2.12 Correlation Matrix between Compulsory courses and Program Learning Outcomes (PLO)**

No	Semester	Course Code	Name of Course - Compulsory Courses	Credit		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5
				SKS	ECTS	Attitude	Knowledge	General Skills	Special Skill	Long Life Learning
1	1	UNU 100X	Religion	2	3.32	S				
2		MMM 1101	Calculus I	3	4.98		M			
3		MKK 1101	General Chemistry I	3	4.98	M			L	
4		MII 1201	Programming	3	4.98		M			
5		MFF 1011	Basic Physics I	3	4.98		M			M
6		MFF 1061	Measurement Technique in Physics	2	3.32		M			M
7		MKK 1111	Basic Chemistry Experiment I	1	1.66		M	L	L	
8		MFF 1020	Mathematical Physics I	3	4.98		M		L	
9		MFF 1013	Basic Physics Experiments I	1	1.66		S	L	M	M
10	2	MFF 1012	Basic Physics II	3	4.98		M			M
11		UNU 1010	Pancasila	2	3.32		S			
12		MFF 1024	Numerical Method	2	3.32		L		L	L
13		MFF 1850	Electronics	3	4.98		M			M
14		MFF 1014	Basic Physics Experiments II	1	1.66		S		M	M
15		MFF 1401	Mechanics I	2	3.32		M			M
16		MFF 1053	Thermodynamics	3	4.98		M			M
17		MFF 1405	Wave	2	3.32		M			M
18		MFF 1021	Mathematical Physics II	3	4.98		L		L	
19	3	MFF 2415	Electromagnetics I	2	3.32		M			M
20		MFF 2027	Computational Physics	2	3.32		M		L	L
21		MFF 2851	Electronics Experiment**)	1	1.66		S	L	M	M
22		MFF 2028	Numerical Method Experiments**)	1	1.66	L	M	L	L	L
23		MFF 2034	Quantum Physics I	3	4.98		M			M
24		MFF 2024	Mathematical Physics III	3	4.98		L		L	

25		MFF 2402	Mechanics II	2	3.32		M			M
26		MFF 2031	Relativity Theory	2	3.32		M		L	M
27		MFF 2051	Statistical Physics	3	4.98		M			M
28		MFF 2062	Laboratory Internship**)	1	1.66	M	M	M	M	M
29	4	MFF 2310	Atomic and Molecular Physics	3	4.98		M			M
30		MFF 2410	Electromagnetics II	2	3.32		M			M
31		MFF 2033	Modern of Physics Experiments**)	1	1.66	L	S		M	M
32		MFF 2035	Quantum Physics II	3	4.98		M			L
33		MFF 2601	Solid State Physics I	2	3.32		M			M
34		MFF 2205	Nuclear and Particle Physics I	2	3.32		M			M
35		MFF 2313	Atomic and Molecular Physics Experiments	1	1.66		S	M	L	M
36		UNU 3000	Civic	2	3.32	M				
37		MFF 2060	Research Methodology and Scientific Communication**)	3	4.98			M		S
38	5	MFF 3015	Philosophy of Physics	2	3.32	M	S	L		M
39		MFF 3411	Modern Optics	2	3.32		M			M
40		MFF 3206	Nuclear and Particle Physics II	2	3.32		M			M
41		MFF 3608	Solid State Physics II	2	3.32		M			M
42		MFF 3204	Nuclear Physics Experiments**)	1	1.66		S	M	M	M
43		MFF 3602	Solid State Physics Experiments**)	1	1.66		M			M
44		UNU 4500	Community Service Program**)	3	4.98	M				
	6									
45	7	MFF 4011	Final Project A**)	2	3.32		M	M		M
46	8	MFF 4011	Final Project B**)	4	6.64		M	M	M	M

**Table 2.13 Correlation Matrix between Elective courses and Program Learning Outcomes (PLO)**

No	Semester	Course Code	Name of Course - Elective Courses	Credit		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5
				SKS	ECTS	Attitude	Knowledge	General Skills	Special Skill	Long Life Learning
1	Odd	MFG 1101	Introduction to Geophysics	2	3.32		L	L		
2		MFF 2061	Metrology and Calibration of Physics	2	3.32		M			M
3		MFF 2071	Instrumentation System	2	3.32		M			L
4		MFF 2853	Sensor System	2	3.32		M			L
5		MFF 2873	Physics of Imaging	2	3.32		L			L
6		MFF 2953	Celestial Mechanics	2	3.32		M			L
7		MFF 2029	Mathematical and Theoretical Physics I	2	3.32		M	M		L
8		MFF 3053	Physics of Complex and Nonlinear Systems	2	3.32		M			L
9		MFF 3291	Nuclear and Particle Detection Method	2	3.32		M			L
10		MFF 3423	Introduction to Laser Physics	2	3.32		M			L
11		MFF 3701	Medical Physics	2	3.32		M			L
12		MFF 3843	Microwave	2	3.32		M			L
13		MFF 3871	Tomography Physics	2	3.32		L			L
14		MFF 3891	Environmental Physics	2	3.32		M			M
15		MFF 4033	Quantum Mechanics	2	3.32		M			M
16		MFF 4611	Liquid Crystal Physics and Polymers	2	3.32		M			L
17		MFF 4893	Introduction to Econophysics	2	3.32		M			L
18		MFF 4043	Introduction to Astrophysics and Cosmology	2	3.32		S		M	M
19		MFF 4891	Internship	2	3.32		M		M	M
20	Even	MFF 1064	Graphical Methods in Physics	2	3.32		M			L
21		MFF 1528	Simulation and Visualization in Physics	2	3.32		L		L	M
22		MFF 2070	Microcontroller and Interfacing	2	3.32		M			L
23		MFF 2322	Atomic and Molecular Detection Method	2	3.32		M			L
24		MFF 3002	Science and Religion	2	3.32	S				

25	MFF 3024	Selected Topics in Computational Physics	2	3.32		M			L
26	MFF 3030	Mathematical and Theoretical Physics II	2	3.32		M	M		L
27	MFF 3114	Introduction to Particle Physics	2	3.32		M			L
28	MFF 3284	Reactor Physics	2	3.32		M			L
29	MFF 3288	Radiation Protection	2	3.32		M			L
30	MFF 3436	Modern Acoustics	2	3.32		M			L
31	MFF 3680	Introduction to Nanoscience	2	3.32		M			
32	MFF 3810	Selected Topics in Material Physics	2	3.32		M			L
33	MFF 3812	Materials Analysis Method	3	4.98		L			M
34	MFF 3820	Computational Material Physics	3	4.98		L			L
35	MFF 3872	Biophysics	2	3.32		L			L
36	MFF 3876	Radiographic of Physics	2	3.32		M			L
37	MFF 3882	Energy	2	3.32		L			L
38	MFF 3892	Science and Technology Entrepreneurship	2	3.32					L
39	MFF 4034	Advanced Quantum Mechanics	2	3.32		M	M		M