

Appendix 2. Matrix course versus learning outcomes

No.	Code	Courses	ECTS	Credits	Term	Intended learning outcomes							
						1	2	3	4	5	6	7	8
1	MA001IU	Calculus 1	6.8	4	1	x	x					x	x
2	PH013IU	Physics 1	3.4	2	1	x	x					x	
3	BT311IU	Biology	5.1	3	1	x	x	x		x			
4	BT312IU	Practice in Biology	1.7	1	1	x	x		x	x		x	
5	CH011IU	Chemistry for Engineers	5.1	3	1	x	x					x	
6	CH012IU	Chemistry Laboratory	1.7	1	1		x		x	x		x	
7	EN007IU	Writing AE1	3.4	2	1	x	x					x	x
8	EN008IU	Listening AE1	3.4	2	1	x	x					x	x
9	PH014IU	Physics 2	3.4	2	2	x	x					x	
10	EN011IU	Writing AE2	3.4	2	2	x	x					x	x
11	EN012IU	Speaking AE2	3.4	2	2	x	x					x	x
12	PE008IU	Critical Thinking	5.1	3	2		x			x		x	x
13	CH009IU	Organic Chemistry	5.1	3	2	x		x					
14	BT150IU	Introduction to Biotechnology	3.4	2	2	x	x	x		x			x
15	PE015IU	Philosophy of Marxism and Leninism	5.1	3	Sum1					x			x
16	PE016IU	Political economics of Marxism and Leninism	3.4	2	Sum1					x			x
17	PE014IU	Environmental Science	5.1	3	Sum1	x	x			x		x	
18	BT313IU	Genetics	5.1	3	3	x	x	x		x		x	x
19	BT314IU	Practice in Genetics	1.7	1	3	x	x		x	x		x	
20	BT010IU	Plant Physiology	5.1	3	3	x			x		x		x
21	BT315IU	Analytical Chemistry	5.1	3	3	x	x			x			
22	BT316IU	Practice in Analytical Chemistry	1.7	1	3	x	X		x	x		x	

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						1	2	3	4	5	6	7	8
23	PE017IU	Scientific socialism	3.4	2	3					x			x
24	BT317IU	Biostatistics	3.4	2	4	x	x				x	x	x
25	BT318IU	Practice in Biostatistics	1.7	1	4		x		x	x		x	
26	BT319IU	Biochemistry	5.1	3	4			x	x	x	x		
27	BT320IU	Practice in Biochemistry	1.7	1	4	x	x		x	x		x	
28	BT321IU	Microbiology	5.1	3	4	x	x	x		x			
29	BT322IU	Practice in Microbiology	1.7	1	4			x	x	x			
30	BT009IU	Cell Biology	5.1	3	4	x			x		x		x
31	BT210IU	Human Physiology	5.1	3	4		x	x		x		x	
32	PE018IU	History of Vietnamese Communist Party	3.4	2	5					x			x
33	PE019IU	Ho Chi Minh's Thoughts	3.4	2	5					x			x
34	BT333IU	Molecular Biotechnology	5.1	3	5	x	x	x		x	x		
35	BT334IU	Practice in Molecular Biotechnology	1.7	1	5			x	x	x	x		
36	BT335IU	Immunology	5.1	3	5	x			x		x		
37	BT336IU	Practice in Immunology	1.7	1	5			x	x	x		x	
38	BT217IU	Molecular Genetics	5.1	3	6		x		x		x	x	x
39	BT337IU	Bioinformatics	5.1	3	6				x	x	x	x	x
40	BT338IU	Practice in Bioinformatics	1.7	1	6	x			x	x		x	
41	BT221IU	Internship	3.4	2	Sum2			x	x	x	x	x	x
42	BT216IU	Experimental Design	5.1	3	7	x			x		x		
43	BT179IU	Thesis	20.4	12	8	x	x	x	x	x	x	x	x
44	BT218IU	Plant Science	5.1	3	6			x		x		x	x
45	BT306IU	Developmental Biology	5.1	3	6		x	x		x	x		
46	BT200IU	Scientific Writing Workshop	3.4	2	6		x			x		x	x

No.	Code	Courses	ECTS	Credits	Term	Intended learning outcomes							
						1	2	3	4	5	6	7	8
47	BT207IU	Human Pharmacology	5.1	3	6		x	x		x		x	x
48	BT339IU	Protein Biotechnology	5.1	3	6		x	x	x	x	x	x	x
49	BT340IU	Practice in Protein Biotechnology	1.7	1	6	x			x		x		
50	BT341IU	Bioprocess Engineering	5.1	3	6	x			x		x	x	
51	BT342IU	Practice in Bioprocess Engineering	1.7	1	6	x			x		x	x	
52	IS050IU	Project management	5.1	3	6	x	x						x
53	BA115IU	Introduction to Business Administration	5.1	3	6	x	x					x	x
54	BA006IU	Business Communication	5.1	3	6	x	x					x	x
55	BT343IU	Medical Genetics	5.1	3	7	x	x	x					x
56	BT344IU	Practice in Medical Genetics	1.7	1	7				x	x	x	x	
57	BT345IU	Crop Biotechnology	5.1	3	7	x		x		x		x	x
58	BT346IU	Practice in Crop Biotechnology	1.7	1	7			x	x	x	x		
59	BT347IU	Techniques in Plant Biotechnology	5.1	3	7	x			x		x		x
60	BT348IU	Practice in Techniques in Plant Biotechnology	1.7	1	7			x	x	x			
61	BT349IU	Pharmaceutical Biotechnology	5.1	3	7		x	x	x	x	x	x	x
62	BT350IU	Practice in Pharmaceutical Biotechnology	1.7	1	7		x	x	x	x	x	x	x
63	BT351IU	Molecular Diagnostics	5.1	3	7	x	x	x					x
64	BT352IU	Practice in Molecular Diagnostics	1.7	1	7				x	x	x	x	
65	BT353IU	Reproductive and Regenerative Biomedicine	5.1	3	7			x	x	x	x		x
66	BT354IU	Practice in Reproductive and Regenerative Biomedicine	1.7	1	7		x	x	x	x	x		
67	BT355IU	Stem cell Biology	5.1	3	7			x	x	x	x		x

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						1	2	3	4	5	6	7	8
68	BT356IU	Practice in Stem cell Biology	1.7	1	7		x	x	x	x	x		
69	BT357IU	Medical Microbiology	5.1	3	7	x			x	x	x		
70	BT358IU	Practice in Medical Microbiology	1.7	1	7	x			x		x		
71	BT359IU	Microbial Biotechnology	5.1	3	7			x	x		x	x	
72	BT360IU	Practice in Microbial Biotechnology	1.7	1	7			x	x		x	x	x