

**5. IU ISE PROGRAM (for batch 2019)**

**5.1 English Level 1: TOEFL iBT ≥ 61**

**TOTAL CREDITS: 152 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)**

Freshman Year (Year 1)					
Semester 1		Crds	Semester 2		Crds
EN007IU	Writing AE1	2	EN011IU	Writing AE2	2
EN008IU	Listening AE1	2	EN012IU	Speaking AE2	2
MA001IU	Calculus 1	4	MA003IU	Calculus 2	4
PH013IU	Physics 1	2	PE008IU	Critical Thinking	3
PH014IU	Physics 2	2	PT002IU	Physical Training 2	3
PT001IU	Physical Training 1	3	IS001IU	Introduction to Industrial Engineering	1
CH012IU	Chemistry Laboratory	1	IS054IU	Engineering Drawing	3
CH011IU	Chemistry for Engineers	3	PH015IU	Physics 3	3
<b>Total Credits</b>		<b>19</b>	<b>Total Credits</b>		<b>21</b>
Summer Semester		Crds			
PE015IU	Philosophy of Maxism and Leninism	3			
PE016IU	Political Economics of Maxism and Leninism	2			
<b>Total Credits</b>		<b>5</b>			

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA027IU	Applied Linear Algebra	2	IS020IU	Engineering Economy	3
IS019IU	Production Management	3	IS081IU	Deterministic models in OR	4
IS086IU	Introduction to Computing	3	IS017IU	Work design & Ergonomics + Lab	4
IS004IU	Engineering Probability & Statistics	4	IS085IU	CAD/CAM/CNC	3
MA023IU	Calculus 3	4	IS034IU	Product Design & Development	3
PE017IU	Scientific Socialism	2	PE018IU	History of Communist Party of Vietnam	2
IS090IU	Engineering Mechanics – Dynamics	2	PE019IU	HCM’s Thoughts	2
<b>Total Credits</b>		<b>20</b>	<b>Total Credits</b>		<b>21</b>
<b>Summer Semester</b>		<b>Crds</b>			
IS052IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			

Junior Year (Year 3)						
Semester 5			Crds	Semester 6		Crds
IS040IU	Management Information System	3	IS079IU	Scientific Writing	2	
PE014IU	Environmental Science	3	IS028IU	Simulation Models in IE	4	
IS025IU	Quality Management	3	IS027IU	Scheduling & Sequencing	3	
IS026IU	Project Management	3	IS041IU	Lean Production	3	
IS024IU	Probabilistic Models in OR	3	IS078IU	Logistics Engineering & Supply Chain Design	3	
IS089IU	Numerical Methods	3	PE020IU	Ethnics and professional skills for engineers	3	
<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>				
IS031IU	Experimental Design	3				
IS087IU	Manufacturing Processes	3				
IS058IU	Time Series & Forecasting techniques	3				
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>		<b>18</b>	
<b>Summer Semester</b>			Crds			
IS053IU	Internship 2	3				
<b>Total Credits</b>		<b>3</b>				

Senior Year (Year 4)								
Semester 7			Semester 8					
		Crds			Crds			
IS083IU	Capstone Design	3	IS048IU	Thesis research	10			
IS033IU	Multi-Criteria Decision Making	3						
IS032IU	Facility Layout	3						
<b>IS__IU</b>	<b>ISE Elective Course (choose 2 courses below)</b>	<b>6</b>						
IS080IU	Creative Thinking	3						
IS035IU	Systems Engineering	3						
IS043IU	Flexible Manufacturing Systems	3						
IS045IU	Leadership	3						
IS023IU	Inventory Management	3						
IS082IU	Retail Management	3						
IS067IU	International Transportation & Logistics	<b>3</b>						
IS062IU	E-Logistics in Supply Chain Management	3						
____IU	<b>Free Elective Course (choose 1 course)</b>	<b>3</b>						
<b>Total Credits</b>		<b>18</b>				<b>Total Credits</b>		<b>10</b>

**Selecting one Free-elective course only from the following courses for 7th semester.**

No	Course ID	Subject	Credits
1	BA115IU	Introduction to Business Administration	3
2	BA117IU	Introduction to Micro Economics	3
3	BA120IU	Business Computing Skills	3
4	BA123IU	Principles of Management	3
5	BA119IU	Introduction to Macro Economics	3
6	BA118IU	Introduction to Psychology	3
7	BA167IU	Introduction to Vietnamese Legal System	3
8	BA197IU	Introduction to Sociology	3
9	IT064IU	Introduction to Computing	3
10	IT011UN	Functional Programming	3
11	IT120IU	Entrepreneurship	3
12	IT007UN	Skills for Communicating Information	3
13	IT151IU	Statistical Methods	3
14	BM013IU	Entrepreneurship in Biomedical Engineering	3
15	BM005IU	Statistics for Health Science	3
16	BM033IU	Information Technology in the Health Care System	3
17	ENEE2001IU	Introduction to Environmental Engineering	3
18	ENEE2008IU	Environmental Ecology	3
19	BT152IU	Biostatistics	3
20	CHE2041IU	Mass Transfer Operations	3
21	MAFE105IU	Financial Economics	3
22	MAFE215IU	Financial Management	3
23	MAFE209IU	Financial markets	3

24	MAFE207IU	Decision Making	3
25	MAFE314IU	Financial Econometrics	3
26	MAFE308IU	Financial Risk Management 1	3
27	MAFE402IU	Portfolio Management	3
28	PH027IU	Earth Observation and The Environment	3
29	PH047IU	Navigation Systems	3
30	PH045IU	Fundamental of Surveying	3
31	PH046IU	Geographic Information Systems (GIS) and Spatical Analysis	3
32	CE505IU	Geotechnics	3
33	CE503IU	Pavement design & Maintenance	3
34	EE049IU	Introduction to Electrical Engineering	3

**5.2 English Level 2: TOEFL iBT  $\geq$  35**

**TOTAL CREDITS: 168 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)**

Freshman Year (Year 1)						
Semester 1			Crds	Semester 2		Crds
EN074IU	Reading & writing IE2	8	CH012IU	Chemistry Laboratory	1	
EN075IU	Listening & speaking IE2	8	CH011IU	Chemistry for Engineers	3	
PT001IU	Physical Training 1	3	EN007IU	Writing AE1	2	
MA001IU	Calculus 1	4	EN008IU	Listening AE1	2	
			PH013IU	Physics 1	2	
			PH014IU	Physics 2	2	
			PT002IU	Physical Training 2	3	
			MA003IU	Calculus 2	4	
			IS001IU	Introduction to Industrial Engineering	1	
			IS054IU	Engineering Drawing	3	
<b>Total Credits</b>		<b>23</b>	<b>Total Credits</b>		<b>23</b>	
Summer Semester			Crds			
PE015IU	Philosophy of Maxism and Leninism	3				
PE016IU	Political Economics of Marxism and Leninism	2				
EN011IU	Writing AE2	2				
EN012IU	Speaking AE2	2				
<b>Total Credits</b>		<b>9</b>				

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA027IU	Applied Linear Algebra	2	IS020IU	Engineering Economy	3
IS019IU	Production Management	3	IS081IU	Deterministic models in OR	4
IS086IU	Introduction to Computing	3	IS017IU	Work design & Ergonomics + Lab	4
IS004IU	Engineering Probability & Statistics	4	IS085IU	CAD/CAM/CNC	3
IS090IU	Engineering Mechanics – Dynamics	2	IS034IU	Product Design & Development	3
MA023IU	Calculus 3	4	PE008IU	Critical Thinking	3
PH015IU	Physics 3	3	PE017IU	Scientific socialism	2
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>		<b>22</b>
<b>Summer Semester</b>		<b>Crds</b>			
IS052IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			



Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
IS089IU	Numerical methods	3	IS079IU	Scientific Writing	2
IS040IU	Management Information System	3	IS028IU	Simulation Models in IE	4
PE014IU	Environmental Science	3	IS027IU	Scheduling & Sequencing	3
IS025IU	Quality Management	3	IS078IU	Logistics Engineering & Supply Chain Design	3
IS026IU	Project Management	3	IS041IU	Lean Production	3
IS024IU	Probabilistic Models in OR	3	PE018IU	History of the Communist Party of Vietnam	2
<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>	PE019IU	HCM' s thoughts	2
IS031IU	Experimental Design	3			
IS087IU	Manufacturing Processes	3			
IS058IU	Time series & forecasting technique	3			
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>		<b>19</b>
<b>Summer Semester</b>		Crds			
IS053IU	Internship 2	3			
<b>Total Credits</b>		<b>3</b>			

Senior Year (Year 4)						
Semester 7			Crds		Semester 8	Crds
IS083IU	Capstone Design	3	IS048IU	Thesis research	10	
IS033IU	Multi-Criteria Decision Making	3				
IS032IU	Facility Layout	3				
PE020IU	Ethnics and professional skills for engineers	3				
<b>IS__IU</b>	<b>ISE Elective Course (choose 2 courses below)</b>	<b>6</b>				
IS080IU	Creative Thinking	3				
IS035IU	Systems Engineering	3				
IS043IU	Flexible Manufacturing Systems	3				
IS045IU	Leadership	3				
IS023IU	Inventory Management	3				
BA146IU	Retail Management	3				
IS067IU	International Transportation & Logistics	3				
IS062IU	E-Logistics in Supply Chain Management	3				
<b>____IU</b>	<b>Free Elective Course (choose 1 course)</b>	<b>3</b>				
<b>Total Credits</b>		<b>21</b>				<b>Total Credits</b>

**Selecting one Free-elective course only from the following courses for 7th semester.**

No	Course ID	Subject	Credits
1	BA115IU	Introduction to Business Administration	3
2	BA117IU	Introduction to Micro Economics	3
3	BA120IU	Business Computing Skills	3
4	BA123IU	Principles of Management	3
5	BA119IU	Introduction to Macro Economics	3
6	BA118IU	Introduction to Psychology	3
7	BA167IU	Introduction to Vietnamese Legal System	3
8	BA197IU	Introduction to Sociology	3
9	IT064IU	Introduction to Computing	3
10	IT011UN	Functional Programming	3
11	IT120IU	Entrepreneurship	3
12	IT007UN	Skills for Communicating Information	3
13	IT151IU	Statistical Methods	3
14	BM013IU	Entrepreneurship in Biomedical Engineering	3
15	BM005IU	Statistics for Health Science	3
16	BM033IU	Information Technology in the Health Care System	3
17	ENEE2001IU	Introduction to Environmental Engineering	3
18	ENEE2008IU	Environmental Ecology	3
19	BT152IU	Biostatistics	3
20	CHE2041IU	Mass Transfer Operations	3
21	MAFE105IU	Financial Economics	3
22	MAFE215IU	Financial Management	3
23	MAFE209IU	Financial markets	3

24	MAFE207IU	Decision Making	3
25	MAFE314IU	Financial Econometrics	3
26	MAFE308IU	Financial Risk Management 1	3
27	MAFE402IU	Portfolio Management	3
28	PH027IU	Earth Observation and The Environment	3
29	PH047IU	Navigation Systems	3
30	PH045IU	Fundamental of Surveying	3
31	PH046IU	Geographic Information Systems (GIS) and Spatical Analysis	3
32	CE505IU	Geotechnics	3
33	CE503IU	Pavement design & Maintenance	3
34	EE049IU	Introduction to Electrical Engineering	3

**5.3 English Level 3: TOEFL iBT < 35**

**TOTAL CREDITS: 190 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)**

Freshman Year (Year 1)							
Semester 1			Crds	Semester 2			Crds
EN072IU	Reading & Writing IE1		11	EN074IU	Reading & writing IE2		8
EN073IU	Listening & Speaking IE1		11	EN075IU	Listening & speaking IE2		8
PT001IU	Physical Training 1		3	PT002IU	Physical Training 2		3
				IS001IU	Introduction to Industrial Engineering		1
				MA001IU	Calculus 1		4
<b>Total Credits</b>			<b>25</b>	<b>Total Credits</b>			<b>24</b>
Summer Semester			Crds				
PE015IU	Philosophy of Marxism and Leninism		3				
PE016IU	Political economics of Marxism and Leninism		2				
EN007IU	Writing AE1		2				
EN008IU	Listening AE1		2				
<b>Total Credits</b>			<b>9</b>				

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA027IU	Applied Linear Algebra	2	CH012IU	Chemistry Laboratory	1
IS004IU	Engineering Probability & Statistics	4	CH011IU	Chemistry for Engineers	3
PE008IU	Critical Thinking	3	IS081IU	Deterministic models in OR	4
PH013IU	Physics 1	2	EN012IU	Speaking AE2	2
PH014IU	Physics 2	2	EN011IU	Writing AE2	2
MA003IU	Calculus 2	4	IS054IU	Engineering Drawing	3
IS086IU	Introduction to Computing	3	MA023IU	Calculus 3	4
			PH015IU	Physics 3	3
<b>Total Credits</b>		<b>20</b>	<b>Total Credits</b>		<b>22</b>
Summer Semester		Crds			
IS052IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			

Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
IS026IU	Project Management	3	IS020IU	Engineering Economy	3
PE014IU	Environmental Science	3	IS017IU	Work design & Ergonomics + Lab	4
IS019IU	Production Management	3	IS034IU	Product Design & Development	3
IS040IU	Management Information System	3	IS041IU	Lean Production	3
IS025IU	Quality Management	3	IS085IU	CAD/CAM/CNC	3
IS090IU	Engineering Mechanics – Dynamics	2	PE018IU	History of the Communist Party of Vietnam	2
PE017IU	Scientific Socialism	2	PE019IU	HCM' s Thoughts	2
<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>			
IS031IU	Experimental Design	3			
IS087IU	Manufacturing Processes	3			
IS058IU	Time series & forecasting technique	3			
<b>Total Credits</b>		<b>22</b>	<b>Total Credits</b>		<b>20</b>
<b>Summer Semester</b>		<b>Crds</b>			
IS053IU	Internship 2	3			
<b>Total Credits</b>		<b>3</b>			

Senior Year (Year 4)					
Semester 7		Crds	Semester 8		Crds
IS033IU	Multi-Criteria Decision Making	3	IS083IU	Capstone Design	3
IS032IU	Facility Layout	3	IS028IU	Simulation Models in IE	4
IS024IU	Probabilistic Models in OR	3	IS027IU	Scheduling & Sequencing	3
IS089IU	Numerical methods	3	IS079IU	Scientific Writing	2
IS__IU	<b>ISE Elective Course (choose 2 courses below)</b>	<b>6</b>	IS078IU	Logistics Engineering & Supply Chain Design	3
IS080IU	Creative Thinking	3	PE020IU	Ethnics and professional skills for engineers	3
IS035IU	Systems Engineering	3			
IS043IU	Flexible Manufacturing Systems	3			
IS045IU	Leadership	3			
IS023IU	Inventory Management	3			
IS082IU	Retail Management	3			
IS067IU	International Transportation & Logistics	3			
IS062IU	E-Logistics in Supply Chain Management	3			



____IU	<b>Free Elective Course (choose 1 course)</b>	<b>3</b>	
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b> <span style="float: right;"><b>18</b></span>
<b>Senior Year (Year 5)</b>			
<b>Semester 9</b>		Crds	
IS048IU	Thesis research	10	
<b>Total Credits</b>		<b>10</b>	

**Selecting one Free-elective course only from the following courses for 7th semester.**

No	Course ID	Subject	Credits
1	BA115IU	Introduction to Business Administration	3
2	BA117IU	Introduction to Micro Economics	3
3	BA120IU	Business Computing Skills	3
4	BA123IU	Principles of Management	3
5	BA119IU	Introduction to Macro Economics	3
6	BA118IU	Introduction to Psychology	3
7	BA167IU	Introduction to Vietnamese Legal System	3
8	BA197IU	Introduction to Sociology	3
9	IT064IU	Introduction to Computing	3
10	IT011UN	Functional Programming	3
11	IT120IU	Entrepreneurship	3
12	IT007UN	Skills for Communicating Information	3
13	IT151IU	Statistical Methods	3
14	BM013IU	Entrepreneurship in Biomedical Engineering	3
15	BM005IU	Statistics for Health Science	3

16	BM033IU	Information Technology in the Health Care System	3
17	ENEE2001IU	Introduction to Environmental Engineering	3
18	ENEE2008IU	Environmental Ecology	3
19	BT152IU	Biostatistics	3
20	CHE2041IU	Mass Transfer Operations	3
21	MAFE105IU	Financial Economics	3
22	MAFE215IU	Financial Management	3
23	MAFE209IU	Financial markets	3
24	MAFE207IU	Decision Making	3
25	MAFE314IU	Financial Econometrics	3
26	MAFE308IU	Financial Risk Management 1	3
27	MAFE402IU	Portfolio Management	3
28	PH027IU	Earth Observation and The Environment	3
29	PH047IU	Navigation Systems	3
30	PH045IU	Fundamental of Surveying	3
31	PH046IU	Geographic Information Systems (GIS) and Spatical Analysis	3
32	CE505IU	Geotechnics	3
33	CE503IU	Pavement design & Maintenance	3
34	EE049IU	Introduction to Electrical Engineering	3