SCHOOL OF INDUSTRIAL ENGINEERING AND MANAGEMENT

STUDENT'S HANDBOOK

INTERNATIONAL UNIVERSITY
VIETNAM NATIONAL UNIVERSITY HCMC
BLOCK 6, LINH TRUNG WARD, THU DUC DISTRICT, HCMC

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1. INTRODUCTION

The International University (IU) is the first public International University of Vietnam and a member of Vietnam National University – Ho Chi Minh City (VNU). The IU is currently striving to become a prestigious research institution and training high quality human resources for the country. It is fully empowered to award all degrees from undergraduate to post graduate levels. Its internationality is reflected in international academic environment of IU as a whole, including all degree programs, teaching staff, languages of instruction, academic and research infrastructure. Its publicity is reflected in the long-term support from the government and other funding agencies and organizations at all levels – from local national to regional and international.

Schools and Departments

- School of Industrial Engineering and Management
- School of Biotechnology
- School of Business
- School of Computer Science and Engineering
- School of Electrical Engineering
- School of Biomedical Engineering
- Department of Civil Engineering
- Department of English
- Department of Mathematics

- Department of Physics
- Department of Environmental Engineering

2. SCHOOL OF INDUSTRIAL ENGINEERING AND MANAGEMENT

2.1 Vision

Take leading in education, research and transfer in the field of Advanced Technologies and Management.

2.2 Mission

Develop high-quality undergraduate, graduate and PhD education in the field of Advanced Technologies and Management to meet regional and international standards.

2.3 Program Objectives

1. Be practicing engineers in the field of production and services, who are able to:
   - (i) Design or redesign Industrial, Logistics & Supply Chain systems
   - (ii) Operate and manage Industrial, Logistics & Supply Chain systems
   - (iii) Improve the existing Industrial, Logistics & Supply Chain systems
   - (iv) Support for wise decision making
2. Engage in lifelong learning to maintain and enhance professional skills
3. Work effectively with people and demonstrate leadership, professional skills and ethical behavior in the workplace
4. Fulfill the needs of community and industrial sector of Vietnam in solving technical and management problems using industrial and systems engineering principles, tools and techniques.

2.4 Expected Learning Outcomes

1	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3	an ability to communicate effectively with a range of audience
4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

2.5 Career Opportunities

IEM engineers can take on and perform excellently tasks in various fields, namely Logistics & Supply Chain Management, Procurement Management, Project Management, Inventory Management, Quality Management, Production Management, Optimization in Production and Service, developing an integrated solution to reduce the operation cost, etc. Qualified graduated engineers can achieve

the top-level positions in organizations such as Production Director and Chief Executive Officer.

2.6 Programs

School of Industrial Engineering and Management has two different programs: ***Industrial and Systems Engineering (ISE)*** and ***Logistics and Supply Chain Management (LSCM)***.

- ISE trains students to be engineers who have ability to design, operate, coordinate, manage production systems and services to create products and services.
- LSCM trains students to be engineers who have ability to design, operate, coordinate, manage activities in Logistics and supply chain. These systems support the supply and storage of raw materials for production, services, distribution and delivery the finished goods to customers.

2.7 Course Design

The course of the B.S Degree in ISE & LSCM in the IU – VNU HCM provides the students the flexibility to join either the IU program (4 years at IU) or the twining program (2 years at IU and 2 years at Rutgers University, or at University Binghamton, the State University of New York). Students will receive bachelor degree awarded by the IU if taking the IU program and bachelor degree awarded by the overseas partner universities if taking the twining program.

The IEM programs are designed with consideration of students' English level which is estimated on TOEFL or TOEFL IBT scores. First year students are classified into three levels:

- For class 2016, 2017, 2018:

- English level 1: TOEFL ≥ 500 (TOEFL IBT ≥ 60 or IELTS > 6.5): Students are admitted to take full program.

- English level 2: 430 ≤ TOEFL < 500 (40 ≤ TOEFL IBT < 60): Students are admitted to take partial program together with English preparation classes (IE2).

- English level 3: TOEFL < 430 (TOEFL IBT < 40): Students are required to take only intensive English course (IE1) for the first semester of the first year at school.

- *(See more on the curricula of different IEM programs)*

- For class 2019 and forward:

  - English level 1: TOEFL iBT ≥ 61 or IELTS ≥ 6.0: Students are admitted to take full program.

  - English level 2: TOEFL iBT ≥ 35 or IELTS ≥ 5.0: Students are admitted to take partial program together with English preparation classes (IE2).

  - English level 3: TOEFL iBT < 35 or IELTS < 5.0 Students are required to take only intensive English course (IE1) for the first semester of the first year at school.

  - *(See more on the curricula of different IEM programs)*

- For class 2020 and forward:

  - English level 1: IELTS ≥ 6.0: Students are admitted to take full program.

  - English level 2: 5.5 ≤ IELTS < 6.0: Students are admitted to take partial program together with English preparation classes (IE3)

- .English level 3: 5.0 ≤ IELTS < 5.5 Students are required to take intensive English course (IE2) for the first semester of the first year at school.
- English level 4: 3.5 ≤ IELTS ≤ 4.5 Students are required to take intensive English course (IE1) for the first semester of the first year at school.
- English level 5: IELTS ≤ 3.0 Students are required to take intensive English course (IE0) for the first semester of the first year at school.
- Students must pass exam for their current English level before taking the next higher level.
- *(See more on the curricula of different IEM programs)*

2.8 Scholarship

Students with entrance examination scores equal or above 25 are eligible to receive full scholarship which is worth 168.000.000 VND (~ $6,000 USD) for the whole course (4 years for domestic programs and 2 years for twinning programs). Partial scholarship, which is worth 84.000.000 VND (~ $ 3,000 USD for the whole course), is offered to students with entrance examination scores from 24 to 25. To maintain the scholarship throughout the whole course, students need to keep their GPA equal or above 70 and scores of all subjects equal or above 50.

To encourage students with good merits, each semester the International University spends around 24,000 USD awarding those who achieve excellent merits in the second semester of the first year. Every semester, 40 scholarships, each worth 12.620.000 VND (~ 600 USD), are granted to the best students who receive neither full nor partial scholarships.

2.9 Course Assessment

- Mid-term exam: Maximum 30%

- Final exam: Maximum 40%
- Others (e.g. In-class quizzes, group presentation, etc): Maximum 30%

2.10 Grading system

Classification	100-Point Grading	4-Point Grading	Alphabet Grading
Passing			
Excellent	90 <= GPA <= 100	4.0	A+
Very Good	80 <= GPA < 90	3.5	A
Good	70 <= GPA < 80	3.0	B+
Fair-Good	60<= GPA < 70	2.5	B
Average	50 <= GPA < 60	2.0	C
No Passing			
Weak	40 <= GPA <= 50	1.5	D+
Very weak	30 <= GPA <= 40	1.0	D
Bad	GPA <= 30	0	F

IU ISE PROGRAM

3. IU ISE PROGRAM (for batch 2017 and 2018)

3.1 English Level 1: TOEFL ≥ 500

TOTAL CREDITS: 146 (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	PT002IU	Physical Training 2	3
PH014IU	Physics 2	2	IS001IU	Introduction to Industrial Engineering	1
PT001IU	Physical Training 1	3	IS054IU	Engineering Drawing	3
CH011IU	Chemistry for Engineers	3	PH015IU	Physics 3	3
			PE008IU	Critical Thinking	3
Total Credits		**18**	**Total Credits**		**21**
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
Total Credits		**5**			

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
IS076IU	Introduction to Computing - Matlab Application	3	IS017IU	Work design & Ergonomics + Lab	4
IS004IU	Engineering Probability & Statistics	4	IS077IU	Introduction to Programming – C++/C#, Python	2
MA023IU	Calculus 3	4	IS034IU	Product Design & Development	3
PE012IU	HCM' s Thoughts	2	PE013IU	Revolutionary Lines of Vietnamese Communist Party	3
IS016IU	Engineering Mechanics – Dynamics	3	MA029IU	Differential Equation	2
Total Credits		**21**	**Total Credits**		**21**
Summer Semester		Crds			
IS052IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

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
IS___IU	**ISE Elective Course (choose 1 course below)**	**3**			
IS031IU	Experimental Design	3			
IS018IU	CAD/CAM	3			
IS058IU	Time series & forecasting techniques	3			
Total Credits		**18**	**Total Credits**		**15**
Summer Semester		Crds			
IS053IU	Internship 2	3			
Total Credits		**3**			

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			
IS___IU	**ISE Elective Course (choose 3 courses below)**	**9**			
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	3			
IS062IU	E-Logistics in Supply Chain Management	3			
Total Credits		**18**	**Total Credits**		**10**

3.2 English Level 2: 430 ≤ TOEFL < 500

TOTAL CREDITS: 162 (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	EN007IU	Writing AE1	2
EN075IU	Listening & speaking IE2	8	EN008IU	Listening AE1	2
PT001IU	Physical Training 1	3	PH013IU	Physics 1	2
MA001IU	Calculus 1	4	CH011IU	Chemistry for Engineers	3
			PT002IU	Physical Training 2	3
			PH014IU	Physics 2	2
			MA003IU	Calculus 2	4
			IS001IU	Introduction to Industrial Engineering	1
			IS054IU	Engineering Drawing	3
Total Credits		**23**	**Total Credits**		**22**
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
Total Credits		**5**			

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
IS076IU	Introduction to Computing - Matlab	3	IS017IU	Work design & Ergonomics + Lab	4
IS004IU	Engineering Probability & Statistics	4	IS077IU	Introduction to Programming – C++/C#, Python	2
IS016IU	Engineering Mechanics – Dynamics	3	IS034IU	Product Design & Development	3
MA023IU	Calculus 3	4	PE008IU	Critical Thinking	3
EN011IU	Writing AE2	2			
EN012IU	Speaking AE2	2	MA029IU	Differential Equation	2
Total Credits		**23**	**Total Credits**		**21**
Summer Semester		Crds			
IS052IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

Junior Year (Year 3)					
Semester 5		Crds	**Semester 6**		Crds
PH015IU	Physics 3	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	PE012IU	HCM' s thoughts	2
IS024IU	Probabilistic Models in OR	3	PE013IU	Revolutionary Lines of Vietnamese Communist Party	3
IS___IU	**ISE Elective Course (choose 1 course below)**	**3**	IS041IU	Lean Production	3
IS031IU	Experimental Design	3			
IS018IU	CAD/CAM	3			
IS058IU	Time series & forecasting technique	3			
Total Credits		**21**	**Total Credits**		**20**
Summer Semester		Crds			
IS053IU	Internship 2	3			
Total Credits		**3**			

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			
IS___IU	**ISE Elective Course (choose 3 courses below)**	**9**			
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			
Total Credits		**18**	**Total Credits**		**10**

3.3 English Level 3: TOEFL < 430

TOTAL CREDITS: 181 (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
Total Credits		**25**	**Total Credits**		**24**
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
Total Credits		**5**			

Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
MA027IU	Applied Linear Algebra	2	CH011IU	Chemistry for Engineers	3
EN007IU	Writing AE1	2	IS081IU	Deterministic models in OR	4
EN008IU	Listening AE1	2	EN012IU	Speaking AE2	2
IS004IU	Engineering Probability & Statistics	4	EN011IU	Writing AE2	2
PE008IU	Critical Thinking	3	IS054IU	Engineering Drawing	3
PH013IU	Physics 1	2	PE012IU	HCM' s thoughts	2
PH014IU	Physics 2	2	MA023IU	Calculus 3	4
MA003IU	Calculus 2	4			
Total Credits		**21**	**Total Credits**		**20**
Summer Semester		Crds			
IS052IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

Junior Year (Year 3)					
Semester 5		Crds	**Semester 6**		Crds
PH015IU	Physics 3	3	IS076IU	Introduction to Computing-Matlab	3
IS084IU	Environmental Science	3	IS020IU	Engineering	3
IS019IU	Production Management	3	IS017IU	Work design & Ergonomics + Lab	4
IS077IU	Introduction to Programming – C++/C#, Python	2	IS034IU	Product Design & Development	3
IS040IU	Management Information System	3	IS041IU	Lean Production	3
IS016IU	Engineering Mechanics – Dynamics	3	PE013IU	Revolutionary Lines of Vietnamese	3
IS025IU	Quality Management	3	MA029IU	Differential Equation	2
IS___IU	**ISE Elective Course (choose 1 course below)**	**3**			
IS031IU	Experimental Design	3			
IS018IU	CAD/CAM	3			
IS058IU	Time series & forecasting technique	3			
Total Credits		**23**	**Total Credits**		**18**
Summer Semester		Crds			
IS053IU	Internship 2	3			
Total Credits		**3**			

Senior Year (Year 4)					
Semester 7		Crds	**Semester 8**		Crds
IS083IU	Capstone Design	3	IS028IU	Simulation Models in IE	4
IS033IU	Multi-Criteria Decision Making	3	IS027IU	Scheduling & Sequencing	3
IS026IU	Project Management	3	IS032IU	Facility Layout	3
IS024IU	Probabilistic Models in OR	3	IS078IU	Logistics Engineering & Supply Chain Design	3
IS___IU	**ISE Elective Course (choose 3 courses below)**	**9**	IS079IU	Scientific Writing	2
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	3			
IS062IU	E-Logistics in Supply Chain Management	3			
Total Credits		**21**	**Total Credits**		**15**

Senior Year (Year 5)			
Semester 9		Crds	
IS048IU	Thesis research	10	
Total Credits		**10**	

4. IU ISE PROGRAM (for batch 2019)

4.1 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
Total Credits		**19**	**Total Credits**		**21**
Summer Semester		Crds			
PE015IU	Philosophy of Maxism and Leninism	3			
PE016IU	Political Economics of Maxism and Leninism	2			
Total Credits		**5**			

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
Total Credits		**20**	**Total Credits**		**21**
Summer Semester		Crds			
IS052IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

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
IS___IU	**ISE Elective Course (choose 1 course below)**	**3**			
IS031IU	Experimental Design	3			
IS087IU	Manufacturing Processes	3			
IS058IU	Time Series & Forecasting techniques	3			
Total Credits		**21**	**Total Credits**		**18**
Summer Semester		Crds			
IS053IU	Internship 2	3			
Total Credits		**3**			

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			
IS___IU	**ISE Elective Course (choose 2 courses below)**	**6**			
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	**3**			
IS062IU	E-Logistics in Supply Chain Management	3			
_____IU	**Free Elective Course (choose 1 course)**	**3**			
Total Credits		**18**	**Total Credits**		**10**

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

4.2 English Level 2: TOEFL iBT ≥ 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
Total Credits		**23**	**Total Credits**		**23**
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			
Total Credits		**9**			

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
Total Credits		**21**	**Total Credits**		**22**
Summer Semester		**Crds**			
IS052IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

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
IS___IU	**ISE Elective Course (choose 1 course below)**	**3**	PE019IU	HCM' s thoughts	2
IS031IU	Experimental Design	3			
IS087IU	Manufacturing Processes	3			
IS058IU	Time series & forecasting technique	3			
Total Credits		**21**	**Total Credits**		**19**
Summer Semester		Crds			
IS053IU	Internship 2	3			
Total Credits		**3**			

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			
IS___IU	**ISE Elective Course (choose 2 courses below)**	**6**			
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			
_____IU	**Free Elective Course (choose 1 course)**	**3**			
Total Credits		**21**	**Total Credits**		**10**

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

4.3 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
Total Credits		**25**	**Total Credits**		**24**
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			
Total Credits		**9**			

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
Total Credits		**20**	**Total Credits**		**22**
Summer Semester		Crds			
IS052IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

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
IS___IU	**ISE Elective Course (choose 1 course below)**	**3**			
IS031IU	Experimental Design	3			
IS087IU	Manufacturing Processes	3			
IS058IU	Time series & forecasting technique	3			
Total Credits		**22**	**Total Credits**		**20**
Summer Semester		Crds			
IS053IU	Internship 2	3			
Total Credits		**3**			

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	**ISE Elective Course (choose 2 courses below)**	**6**	IS078IU	Logistics Engineering & Supply Chain Design	3
IS080IU	Creative Thinking	3	PE020IU	Ethnics and professional akills 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	**Free Elective Course (choose 1 course)**	**3**		
Total Credits		**21**	**Total Credits**	**18**
Senior Year (Year 5)				
Semester 9		Crds		
IS048IU	Thesis research	10		
Total Credits		**10**		

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. IU ISE PROGRAM (for batch 2020 and forward)

5.1 English Level 1: IELTS ≥ 6.0

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

No.	Courses code	Courses	Credits
Semester 1			
1	EN007IU	Writing AE1	2
2	EN008IU	Listening AE1	2
3	MA001IU	Calculus 1	4
4	PH013IU	Physics 1	2
5	PH014IU	Physics 2	2
6	PT001IU	Physical Training 1	3
7	CH012IU	Chemistry Laboratory	1
8	CH011IU	Chemistry for Engineers	3
		Total credits	**19**
Semester 2			
9	EN011IU	Writing AE2	2
10	EN012IU	Speaking AE2	2
11	MA003IU	Calculus 2	4
12	PE008IU	Critical Thinking	3
13	PT002IU	Physical Training 2	3
14	IS001IU	Introduction to Industrial Engineering	1
15	IS054IU	Engineering Drawing	3
16	PH015IU	Physics 3	3
		Total credits	**21**
Summer semester			
17	PE015IU	Philosophy of marxism and Leninism	3
18	PE016IU	Political economics of marxism and leninism	2

		Total credits	**5**
Semester 3			
19	MA027IU	Applied Linear Algebra	2
20	IS019IU	Production Management	3
21	IS086IU	Introduction to Computing	**3**
22	IS004IU	Engineering Probability & Statistics	4
23	MA023IU	Calculus 3	4
24	PE017IU	Scientific socialism	**2**
25	IS090IU	Engineering Mechanics – Dynamics	2
		Total credits	**20**
Semester 4			
26	IS020IU	Engineering Economy	3
27	IS081IU	Deterministic models in OR	4
28	IS017IU	Work design & Ergonomics + Lab	4
29	IS085IU	CAD/CAM/CNC	**3**
30	IS034IU	Product Design & Development	3
31	PE018IU	History of the Communist Party of Vietnam	**2**
32	PE019IU	HCM' s thoughts	**2**
		Total credits	**21**
Summer semester			
33	IS052IU	*Internship 1*	2
34		Military Training	0
		Total credits	**2**
Semester 5			
35	IS040IU	Management Information System	3
36	PE014IU	Environmental Science	**3**
37	IS025IU	Quality Management	**3**
38	IS026IU	Project Management	3
39	IS024IU	Probabilistic Models in OR	3

40	IS089IU	Numerical methods	3
	IS___IU	**Nhóm tự chọn số 01 - ISE Elective Course (choose 1 course below)**	**3**
41	IS031IU	Experimental Design	3
42	IS087IU	Manufacturing Processes	**3**
43	IS058IU	Time series & forecasting technique	3
		Total credits	**21**
Semester 6			
44	IS079IU	Scientific Writing	2
45	IS028IU	Simulation Models in IE	4
46	IS027IU	Scheduling & Sequencing	3
47	IS041IU	Lean Production	3
48	IS078IU	Logistics engineering & supply chain design	3
49	PE020IU	Ethnics and professional skills for engineers	3
		Total credits	**18**
Summer semester			
50	IS053IU	*Internship 2*	3
		Total credits	3
Semester 7			
51	IS083IU	Capstone Design	**3**
52	IS033IU	Multi-Criteria Decision Making	**3**
53	IS032IU	Facility Layout	**3**
	IS___IU	**Nhóm tự chọn số 02 - ISE Elective Course (choose 2 courses below)**	**6**
54	IS080IU	Creative Thinking	3
55	IS035IU	Systems Engineering	3

56	IS043IU	Flexible Manufacturing Systems	3
57	IS045IU	Leadership	3
58	IS023IU	Inventory Management	3
59	IS082IU	Retail Management	3
60	IS067IU	International Transportation & Logistics	3
61	IS062IU	E-Logistics in Supply Chain Management	3
62	**_____IU**	**Nhóm tự chọn số 03 - Free Elective Course (choose 1 course)**	**3**
		Total credits	**18**
Semester 8			
63	IS048IU	Thesis research	10
		Total credits	**10**

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: 5.5 ≤ IELTS < 6.0

TOTAL CREDITS: 162 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)

No.	Courses code	Courses	Credits
Semester 1			
1	ENTP03	Intensive English 3- Twinning Program (*)	10
2	PT001IU	Physical Training 1	3
3	MA001IU	Calculus 1	4
		Total credits	**17**
Semester 2			
4	EN007IU	Writing AE1	2
5	EN008IU	Listening AE1	2
6	CH012IU	Chemistry Laboratory	1
7	CH011IU	Chemistry for Engineers	3
8	PH013IU	Physics 1	2
9	PH014IU	Physics 2	2
10	PT002IU	Physical Training 2	3
11	MA003IU	Calculus 2	4
12	IS001IU	Introduction to Industrial Engineering	1
13	IS054IU	Engineering Drawing	3
		Total credits	**23**
Summer semester			
14	EN011IU	Writing AE2	2
15	EN012IU	Speaking AE2	2
16	PE015IU	Philosophy of marxism and Leninism	3
17	PE016IU	Political economics of marxism and leninism	2
		Total credits	**9**
Semester 3			
18	MA027IU	Applied Linear Algebra	2
19	IS019IU	Production Management	3
20	IS086IU	Introduction to Computing	**3**
21	IS004IU	Engineering Probability & Statistics	4

22	IS090IU	Engineering Mechanics – Dynamics	2
23	PH015IU	Physics 3	3
24	MA023IU	Calculus 3	4
		Total credits	**21**
Semester 4			
25	IS020IU	Engineering Economy	3
26	IS081IU	Deterministic models in OR	4
27	IS017IU	Work design & Ergonomics + Lab	4
28	IS085IU	CAD/CAM/CNC	**3**
29	IS034IU	Product Design & Development	3
30	PE008IU	Critical Thinking	3
31	PE017IU	Scientific socialism	2
		Total credits	**22**
Summer semester			
32	IS052IU	Internship 1	2
33		Military Training	
		Total credits	**2**
Semester 5			
34	IS040IU	Management Information System	3
35	PE014IU	Environmental Science	**3**
36	IS025IU	Quality Management	3
37	IS026IU	Project Management	3
38	IS024IU	Probabilistic Models in OR	3
39	IS089IU	Numerical methods	3
	IS___IU	**Nhóm tự chọn số 01 - ISE Elective Course (choose 1 course below)**	**3**
40	IS031IU	Experimental Design	3
41	IS087IU	Manufacturing Processes	**3**
42	IS058IU	Time series & forecasting technique	3
		Total credits	**21**
Semester 6			
43	IS079IU	Scientific Writing	2
44	IS028IU	Simulation Models in IE	4
45	IS027IU	Scheduling & Sequencing	3

46	IS078IU	Logistics engineering & supply chain design	3
47	PE018IU	History of the Communist Party of Vietnam	2
48	PE019IU	HCM' s thoughts	2
49	IS041IU	Lean Production	3
50	PE020IU	Ethnics and professional akills for engineers	3
		Total credits	**22**
Summer semester			
51	IS053IU	Internship 2	3
		Total credits	**3**
Semester 7			
52	IS083IU	Capstone Design	**3**
53	IS033IU	Multi-Criteria Decision Making	3
54	IS032IU	Facility Layout	3
	IS___IU	**Nhóm tự chọn số 02 - ISE Elective Course (choose 2 courses below)**	**6**
55	IS080IU	Creative Thinking	3
56	IS035IU	Systems Engineering	3
57	IS043IU	Flexible Manufacturing Systems	3
58	IS045IU	Leadership	3
59	IS023IU	Inventory Management	3
60	IS082IU	Retail Management	3
61	IS067IU	International Transportation & Logistics	3
62	IS062IU	E-Logistics in Supply Chain Management	3
63	**_____IU**	**Nhóm tự chọn số 03 - ISE Elective Course (choose 1 course)**	**3**
		Total credits	**18**
Semester 8			
64	IS048IU	Thesis research	10
		Total credits	**10**

(*) The English level ENTP03 - Intensive English 3- Twinning Program lasts 7 weeks

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: 5.0 ≤ IELTS < 5.5

TOTAL CREDITS: 175 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)

No.	Courses code	Courses	Credits
Semester 1			
1	ENTP02	Intensive English 2 - Twinning Program (*)	13
2	ENTP03	Intensive English 3 - Twinning Program (*)	10
3	PT001IU	Physical Training 1	3
		Total credits	**26**
Semester 2			
4	EN007IU	Writing AE1	2
5	EN008IU	Listening AE1	2
6	CH012IU	Chemistry Laboratory	1
7	CH011IU	Chemistry for Engineers	3
8	PH013IU	Physics 1	2
9	PH014IU	Physics 2	2
10	MA027IU	Applied Linear Algebra	2
11	MA001IU	Calculus 1	4
12	IS001IU	Introduction to Industrial Engineering	1
13	IS054IU	Engineering Drawing	3
		Total credits	**22**
Summer semester			
14	PT002IU	Physical Training 2	3
15	EN011IU	Writing AE2	2
16	EN012IU	Speaking AE2	2
17	PE016IU	Political economics of marxism and leninism	2
18	PE015IU	Philosophy of marxism and Leninism	3

		Total credits	***12***
Semester 3			
19	MA003IU	Calculus 2	4
20	IS019IU	Production Management	**3**
21	IS086IU	Introduction to Computing	3
22	IS004IU	Engineering Probability & Statistics	4
23	IS090IU	Engineering Mechanics – Dynamics	2
24	PH015IU	Physics 3	3
25	MA023IU	Calculus 3	4
		Total credits	***23***
Semester 4			
26	IS020IU	Engineering Economy	3
27	IS081IU	Deterministic models in OR	4
28	IS017IU	Work design & Ergonomics + Lab	4
29	IS085IU	CAD/CAM/CNC	3
30	IS034IU	Product Design & Development	3
31	PE008IU	Critical Thinking	3
32	PE017IU	Scientific socialism	2
		Total credits	***22***
Summer semester			
33	IS052IU	Internship 1	2
34		Military Training	
		Total credits	**2**
Semester 5			
35	IS040IU	Management Information System	**3**
36	PE014IU	Environmental Science	3
37	IS025IU	Quality Management	3
38	IS026IU	Project Management	3

39	IS024IU	Probabilistic Models in OR	3
40	IS089IU	Numerical methods	3
	IS___IU	**Nhóm tự chọn số 01 - ISE Elective Course (choose 1 course below)**	3
41	IS031IU	Experimental Design	**3**
42	IS087IU	Manufacturing Processes	3
43	IS058IU	Time series & forecasting technique	3
		Total credits	**21**
Semester 6			
44	IS079IU	Scientific Writing	2
45	IS028IU	Simulation Models in IE	4
46	IS027IU	Scheduling & Sequencing	3
47	IS078IU	Logistics engineering & supply chain design	3
48	PE018IU	History of the Communist Party of Vietnam	2
49	PE019IU	HCM' s thoughts	2
50	IS041IU	Lean Production	3
51	PE020IU	Ethnics and professional skills for engineers	3
		Total credits	**22**
Summer semester			
52	IS053IU	Internship 2	3
		Total credits	**3**
Semester 7			
53	IS083IU	Capstone Design	3
54	IS033IU	Multi-Criteria Decision Making	3
55	IS032IU	Facility Layout	3
	IS___IU	**Nhóm tự chọn số 02 - ISE Elective Course (choose 2 courses below)**	6
56	IS080IU	Creative Thinking	3
57	IS035IU	Systems Engineering	3

58	IS043IU	Flexible Manufacturing Systems	3
59	IS045IU	Leadership	3
60	IS023IU	Inventory Management	3
61	IS082IU	Retail Management	3
62	IS067IU	International Transportation & Logistics	3
63	IS062IU	E-Logistics in Supply Chain Management	3
64	**_____IU**	**Nhóm tự chọn số 03 - ISE Elective Course (choose 1 course)**	**3**
		Total credits	**18**
Semester 8			
65	IS048IU	***Thesis research***	**10**
		Total credits	**10**

(*) The English level ENTP02 - Intensive English 2- Twinning Program and ENTP03 - Intensive English 3- Twinning Program last 7 weeks

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

5.4 English Level 4: 3.5 ≤ IELTS ≤ 4.5

TOTAL CREDITS: 192 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)

No.	Courses code	Courses	Credits
Semester 1			
1	ENTP01	Intensive English 1- Twinning Program (*)	17
2	ENTP02	Intensive English 2- Twinning Program (*)	13
		Total credits	**30**
Semester 2			
3	ENTP03	Intensive English 3- Twinning Program (*)	10
4	PH013IU	Physics 1	2
5	PH014IU	Physics 2	2
6	MA001IU	Calculus 1	4
7	PT001IU	Physical Training 1	3
		Total credits	**21**
Summer semester			
8	PE015IU	Philosophy of marxism and Leninism	3
9	PE016IU	Political economics of marxism and leninism	2
10	EN007IU	Writing AE1	2
11	EN008IU	Listening AE1	2
12	PT002IU	Physical Training 2	3
		Total credits	**12**
Semester 3			
13	MA027IU	Applied Linear Algebra	2
14	IS004IU	Engineering Probability & Statistics	4
15	CH012IU	Chemistry Laboratory	1
16	CH011IU	Chemistry for Engineers	3

17	IS086IU	Introduction to Computing	3
18	PE008IU	Critical Thinking	3
19	MA003IU	Calculus 2	4
20	IS001IU	Introduction to Industrial Engineering	1
		Total credits	**21**
Semester 4			
21	IS081IU	Deterministic models in OR	4
22	EN011IU	Writing AE2	2
23	EN012IU	Speaking AE2	2
24	IS054IU	Engineering Drawing	3
25	MA023IU	Calculus 3	4
26	PH015IU	Physics 3	3
		Total credits	**18**
Summer semester			
27	IS052IU	Internship 1	2
28		Military Training	0
		Total credits	**2**
Semester 5			
29	PE014IU	Environmental Science	3
30	IS019IU	Production Management	3
31	IS040IU	Management Information System	3
32	IS025IU	Quality Management	3
33	IS026IU	Project Management	3
34	PE017IU	Scientific socialism	2
35	IS090IU	Engineering Mechanics – Dynamics	2
	IS___IU	**Nhóm tự chọn số 01 - ISE Elective Course (choose 1 course below)**	**3**
36	IS031IU	Experimental Design	3
37	IS087IU	Manufacturing Processes	**3**

38	IS058IU	Time series & forecasting technique	3
		Total credits	**22**
Semester 6			
39	IS020IU	Engineering Economy	3
40	IS017IU	Work design & Ergonomics + Lab	4
41	IS034IU	Product Design & Development	3
42	IS085IU	CAD/CAM/CNC	**3**
43	IS041IU	Lean Production	3
44	PE018IU	History of the Communist Party of Vietnam	**2**
45	PE019IU	HCM' s thoughts	**2**
		Total credits	**20**
Summer semester			
46	IS053IU	Internship 2	3
		Total credits	**3**
Semester 7			
47	IS033IU	Multi-Criteria Decision Making	3
48	IS032IU	Facility Layout	3
49	IS024IU	Probabilistic Models in OR	3
50	IS089IU	Numerical methods	3
	IS___IU	**Nhóm tự chọn số 02 - ISE Elective Course (choose 2 courses below)**	**6**
51	IS080IU	Creative Thinking	3
52	IS035IU	Systems Engineering	3
53	IS043IU	Flexible Manufacturing Systems	3
54	IS045IU	Leadership	3
55	IS023IU	Inventory Management	3
56	IS082IU	Retail Management	3
57	IS067IU	International Transportation & Logistics	3
58	IS062IU	E-Logistics in Supply Chain Management	3

59	**_____IU**	**Nhóm tự chọn số 03 - Free Elective Course (choose 1 course)**	**3**
		Total credits	**21**
Semester 8			
60	IS083IU	Capstone Design	3
61	IS028IU	Simulation Models in IE	4
62	IS027IU	Scheduling & Sequencing	3
63	IS078IU	Logistics engineering & supply chain design	3
64	IS079IU	Scientific Writing	2
65	PE020IU	Ethnics and professional akills for engineers	3
		Total credits	**18**
Semester 9			
66	IS048IU	Thesis research	10
		Total credits	**10**

(*) The English level ENTP01- Intensive English 1-Twinning Program; ENTP02 - Intensive English 2- Twinning Program and ENTP03 - Intensive English 3- Twinning Program last 7 weeks

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

5.5 English Level 5: IELTS ≤ 3.0

TOTAL CREDITS: 209 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)

No.	Courses code	Courses	Credits
Semester 1			
1	ENTP00	Intensive English 0- Twinning Program (*)	17
2	ENTP01	Intensive English 1- Twinning Program (*)	17
		Total credits	**34**
Semester 2			
3	ENTP02	Intensive English 2- Twinning Program (*)	13
4	ENTP03	Intensive English 3- Twinning Program (*)	10
5	PT001IU	Physical Training 1	3
		Total credits	**26**
Summer semester			
6	PE015IU	Philosophy of marxism and Leninism	3
7	PE016IU	Political economics of marxism and leninism	2
8	EN007IU	Writing AE1	2
9	EN008IU	Listening AE1	2
10	PT002IU	Physical Training 2	3
		Total credits	**12**
Semester 3			
11	IS001IU	Introduction to Industrial Engineering	1
12	MA027IU	Applied Linear Algebra	2
13	IS004IU	Engineering Probability & Statistics	4
14	PH013IU	Physics 1	2
15	PH014IU	Physics 2	2
16	PE008IU	Critical Thinking	3
17	PE017IU	Scientific socialism	2

18	IS086IU	Introduction to Computing	3
19	MA001IU	Calculus 1	4
		Total credits	**23**
Semester 4			
20	CH012IU	Chemistry Laboratory	1
21	CH011IU	Chemistry for Engineers	3
22	IS081IU	Deterministic models in OR	4
23	EN011IU	Writing AE2	2
24	EN012IU	Speaking AE2	2
25	MA003IU	Calculus 2	4
26	IS054IU	Engineering Drawing	3
27	PH015IU	Physics 3	3
		Total credits	**22**
Summer semester			
28	IS052IU	Internship 1	2
29		Military Training	0
		Total credits	**2**
Semester 5			
30	PE014IU	Environmental Science	3
31	IS019IU	Production Management	3
32	IS040IU	Management Information System	3
33	IS025IU	Quality Management	3
34	IS026IU	Project Management	3
35	MA023IU	Calculus 3	4
36	IS090IU	Engineering Mechanics – Dynamics	2
	IS___IU	**Nhóm tự chọn số 01 - ISE Elective Course (choose 1 course below)**	**3**
37	IS031IU	Experimental Design	3
38	IS087IU	Manufacturing Processes	3

39	IS058IU	Time series & forecasting technique	3
		Total credits	**24**
Semester 6			
40	IS020IU	Engineering Economy	3
41	IS017IU	Work design & Ergonomics + Lab	4
42	IS034IU	Product Design & Development	3
43	IS085IU	CAD/CAM/CNC	**3**
44	IS041IU	Lean Production	3
45	PE018IU	History of the Communist Party of Vietnam	**2**
46	PE019IU	HCM' s thoughts	**2**
		Total credits	**20**
Summer semester			
47	IS053IU	Internship 2	3
		Total credits	**3**
Semester 7			
48	IS033IU	Multi-Criteria Decision Making	3
49	IS032IU	Facility Layout	3
50	IS024IU	Probabilistic Models in OR	3
51	IS089IU	Numerical methods	3
	IS___IU	**Nhóm tự chọn số 02 - ISE Elective Course (choose 2 courses below)**	**6**
52	IS080IU	Creative Thinking	3
53	IS035IU	Systems Engineering	3
54	IS043IU	Flexible Manufacturing Systems	3
55	IS045IU	Leadership	3
56	IS023IU	Inventory Management	3
57	IS082IU	Retail Management	3
58	IS067IU	International Transportation & Logistics	3
59	IS062IU	E-Logistics in Supply Chain Management	3

	_____IU	**Nhóm tự chọn số 03 - Free Elective Course (choose 1 course)**	**3**
		Total credits	**21**
Semester 8			
60	IS083IU	Capstone Design	3
61	IS028IU	Simulation Models in IE	4
62	IS027IU	Scheduling & Sequencing	3
63	IS078IU	Logistics engineering & supply chain design	3
64	IS079IU	Scientific Writing	2
65	PE020IU	Ethnics and professional akills for engineers	3
		Total credits	**18**
Semester 9			
66	IS048IU	Thesis research	10
		Total credits	**10**

(*) The English level Intensive English 0- Twinning Program ENTP00; Intensive English 1-Twinning Program; ENTP02 - Intensive English 2- Twinning Program and ENTP03 - Intensive English 3- Twinning Program last 7 weeks

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

LOGISTICS & LSCM PROGRAM

6. LOGISTICS & SCM PROGRAM (for batch 2016, 2017, 2018)

6.1 English Level 1: TOEFL ≥ 500

TOTAL CREDITS: 143 (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	IS056IU	Introduction to Logistics & Supply	1
CH011IU	Chemistry for Engineers	3	IS054IU	Engineering Drawing	3
			PH015IU	Physics 3	3
Total Credits		**18**	**Total Credits**		**21**
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
PE012IU	HCM' s Thoughts	2			
PE013IU	Revolutionary Lines of Vietnamese	3			
Total Credits		**10**			

Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
IS019IU	Production Management	3	IS077IU	Introduction to Programming – C^{++}/$C^{\#}$, Python	2
IS076IU	Introduction to Computing – MatLab Application	3	IS020IU	Engineering Economy	3
MA027I	Applied Linear Algebra	2	IS081IU	Deterministic models in	4
IS055IU	Principles of Logistics and Supply Chain Management	3	BA003IU	Principles of Marketing	3
IS073IU	Business Law	3	IS081IU	Deterministic models in OR1	
			IS074IU	Import – Export Management	
Total Credits		**18**	**Total Credits**		**18**
Summer Semester		Crds			
IS069IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

Junior Year (Year 3)					
Semester 5		Crds	**Semester 6**		Crds
IS061IU	Information Systems in Supply Chain	3	IS079IU	Scientific Writing	2
IS023IU	Inventory Management	3	IS028IU	Simulation Models In IE	4
IS059IU	Materials Handling Systems	3	IS027IU	Scheduling & Sequencing	3
IS082IU	Retail Management	3	IS078IU	Logistics Engineering & Supply Chain Design	3
BA184IU	Financial Accounting	4	IS068IU	Procurement	3
IS___IU	**LSCM Elective Course (choose 1 course**	**3**			
IS058IU	Time series & Forecasting Techniques	3			
IS024IU	Probabilistic Models in OR	3			
IS035IU	Systems Engineering	3			
Total Credits		**18**	**Total Credits**		**15**
Summer Semester		Crds			
IS070IU	Internship 2	3			
Total Credits		**3**			

Senior Year (Year 4)					
Semester 7		Crds	**Semester 8**		Crds
IS033IU	Multi-Criteria Decision Making	3	IS048IU	Thesis Research	10
IS067IU	International Transportation & Logistics	3			
IS026IU	Project Management	3			
IS___IU	**LSCM Elective Course (choose 2 courses below)**	**6**			
IS025IU	Quality Management	3			
IS062IU	E-Logistics in Supply Chain	3			
IS063IU	Sustainability in Supply Chain	3			
IS064IU	Entrepreneurship in Supply Chain	3			
IS065IU	Supply Security and Risk Management	3			
IS066IU	Data Mining in Supply Chain	3			
IS072IU	Port Planning and Operations	3			
BA130IU	Organizational Behavior	3			
BA032IU	Sales Management	3			
IS045IU	Leadership	3			
IS080IU	Creative Thinking	3			
BA156IU	Human Resources Management	3			
Total Credits		**15**	**Total Credits**		**10**

6.2 English Level 1: 430 ≤ TOEFL < 500

TOTAL CREDITS: 159 (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	EN007IU	Writing AE1	2
EN075IU	Listening & speaking IE2	8	EN008IU	Listening AE1	2
PT001IU	Physical Training 1	3	CH011IU	Chemistry for Engineers	3
MA001IU	Calculus 1	4	PH014IU	Physics 2	2
PH013IU	Physics 1	2	PT002IU	Physical Training 2	3
			IS056IU	Introduction to Logistics & Supply Chain Management	1
			IS054IU	Engineering Drawing	3
			MA003IU	Calculus 2	4
Total Credits		**25**	**Total Credits**		**20**
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
PE012IU	HCM' s thoughts	2			
PE013IU	Revolutionary Lines of Vietnamese Communist Party	3			
Total Credits		**10**			

Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
EN011IU	Writing AE2	2	IS077IU	Introduction to Programming – C^{++}/$C^{\#}$, Python	2
EN012IU	Speaking AE2	2	IS020IU	Engineering Economy	3
IS019IU	Production Management	3	IS081IU	Deterministic models in OR	4
IS004IU	Engineering Probability & Statistics	4	BA003IU	Principles of Marketing	3
PE008IU	Critical Thinking	3	IS057IU	Warehouse Engineering Management	3
IS055IU	Principles Logistics and Supply Chain Management	3	PH015IU	Physics 3	3
IS076IU	Introduction to Computing-MatLab Application	3			
MA027IU	Applied Linear Algebra	2			
Total Credits		**22**	**Total Credits**		**18**
Summer Semester		Crds			
IS069IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

Junior Year (Year 3)					
Semester 5		Crds	**Semester 6**		Crds
BA184IU	Financial Accounting	4	IS068IU	Procurement Management	3
IS061IU	Management Information Systems in Supply Chain	3	IS079IU	Scientific Writing	2
IS023IU	Inventory Management	3	IS078IU	Logistic engineering & supply chain design	3
IS059IU	Materials Handling Systems	3	IS028IU	Simulation Models in IE	4
IS082IU	Retail Management	3	IS074IU	Import–Export Management	3
IS073IU	Business Law	3	IS027IU	Scheduling & Sequencing	3
IS___IU	**LSCM Elective Course (choose 1 course below)**	**3**			
IS058IU	Time series & forecasting techniques	3			
IS024IU	Probabilistic Models in OR	3			
IS035IU	Systems Engineering	3			
Total Credits		**22**	**Total Credits**		**18**
Summer Semester		Crds			
IS070IU	Internship 2	3			
Total Credits		**3**			

Senior Year (Year 4)					
Semester 7			**Crds**	**Semester 8**	**Crds**
IS033IU	Multi-Criteria Decision Making	3	IS048IU	Thesis research	10
IS067IU	International Transportation & Logistics	3			
IS026IU	Project Management	3			
IS___IU	**LSCM Elective Course (choose 2 courses below)**	**6**			
IS025IU	Quality Management	3			
IS062IU	E-Logistics in Supply Chain Management	3			
IS063IU	Sustainability in Supply Chain	3			
IS064IU	Entrepreneurship in Supply Chain	3			
IS065IU	Supply Security and Risk Management	3			
IS066IU	Data Mining in Supply Chain	3			
IS072IU	Port Planning and Operations	3			
BA130IU	Organizational Behavior	3			
BA032IU	Sales Management	3			

IS045IU	Leadership	3		
IS080IU	Creative Thinking	3		
BA156IU	Human Resources Management	3		
Total Credits		**18**	**Total Credits**	**10**

6.3 English Level 3: TOEFL < 430

TOTAL CREDITS: 181 (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	MA001IU	Calculus 1	4
			PT002IU	Physical Training 2	3
			IS056IU	Introduction to Logistics & Supply Chain Management	1
Total Credits		**25**	**Total Credits**		**24**
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
PE012IU	HCM' s thoughts	2			
PE013IU	Revolutionary Lines of Vietnamese Communist Party	3			
Total Credits		**10**			

Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
MA027IU	Applied Linear Algebra	2	CH011IU	Chemistry for Engineers	3
EN007IU	Writing AE1	2	IS081IU	Deterministic models in OR	4
EN008IU	Listening AE1	2	EN011IU	Writing AE2	2
IS004IU	Engineering Probability & Statistics	4	EN012IU	Speaking AE2	2
PH013IU	Physics 1	2	PE008IU	Critical Thinking	3
PH014IU	Physics 2	2	IS054IU	Engineering Drawing	3
MA003IU	Calculus 2	4	PH015IU	Physics 3	3
Total Credits		**18**	**Total Credits**		**20**
Summer Semester		Crds			
IS052IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

Junior Year (Year 3)					
Semester 5		Crds	**Semester 6**		Crds
IS019IU	Production Management	3	IS020IU	Engineering Economy	3
IS076IU	Introduction to Computing – MatLab Application	3	IS057IU	Warehouse Engineering Management	3
IS055IU	Principles Logistics and Supply Chain Management	3	BA184IU	Financial Accounting	4
IS073IU	Business Law	3	BA003IU	Principles of Marketing	3
IS061IU	Management Information Systems in Supply Chain	3	IS074IU	Import – Export Management	3
IS023IU	Inventory Management	3	IS077IU	Introduction to Programming – C^{++}/$C^{\#}$, Python	2
IS___IU	**LSCM Elective Course (choose 1 course below)**	**3**			
IS058IU	Time series & forecasting techniques	3			
IS024IU	Probabilistic Models in OR	3			
IS035IU	Systems Engineering				
Total Credits		**21**	**Total Credits**		**18**

Senior Year (Year 4)					
Semester 7		Crds	**Semester 8**		Crds
IS082IU	Retail Management	3	IS028IU	Simulation Models in IE	4
IS059IU	Materials Handling Systems	3	IS027IU	Scheduling & Sequencing	3
IS033IU	Multi-Criteria Decision Making	3	IS078IU	Logistic engineering & supply chain design	3
IS067IU	International Transportation & Logistics	3	IS068IU	Procurement Management	3
IS026IU	Project Management	3	IS079IU	Scientific Writing	2
IS___IU	**LSCM Elective Course (choose 2 courses below)**	**6**			
IS025IU	Quality Management	3			
IS062IU	E-Logistics in Supply Chain Management	3			
IS063IU	Sustainability in Supply Chain	3			
IS064IU	Entrepreneurship in Supply Chain	3			
IS065IU	Supply Security and Risk Management	3			
IS066IU	Data Mining in Supply Chain	3			

IS072IU	Port Planning and Operations	3		
BA130IU	Organizational Behavior	3		
BA032IU	Sales Management	3		
IS045IU	Leadership	3		
IS080IU	Creative Thinking	3		
BA156IU	Human Resources Management	3		
Total Credits		**21**	**Total Credits**	**15**
Summer semester		Crds		
IS047IU	Internship 2	3		
Total Credits		**3**		
Senior Year (Year 5)				
Semester 9		Crds		
IS048IU	Thesis research	10		
Total Credits		**10**		

7. LOGISTICS & SCM PROGRAM (for batch 2019)

7.1 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	IS056IU	Introduction to Logistics & Supply Chain Management	1
CH012IU	Chemistry Laboratory	1	PH015IU	Physics 3	3
CH011IU	Chemistry for Engineers	3			
Total Credits		**19**	**Total Credits**		**18**
Summer Semester		Crds			
PE015IU	Philosophy of Marxism and Leninism	3			
PE016IU	Political Economics of Marxism and Leninism	2			
Total Credits		**5**			

Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
IS019IU	Production Management	3	IS020IU	Engineering Economy	3
IS086IU	Introduction to Computing	3	IS081IU	Deterministic models in OR	4
MA027IU	Applied Linear Algebra	2	IS057IU	Warehouse Engineering Management	3
IS004IU	Engineering Probability & Statistics	4	MA023IU	Calculus 3	4
IS055IU	Principles of Logistics and Supply Chain Management	3	IS074IU	Import – Export Management	3
PE017IU	Scientific Socialism	2	PE018IU	History of Communist Party of Vietnam	2
IS073IU	Business Law	3	PE019IU	HCM's Thoughts	2
Total Credits		**20**	**Total Credits**		**21**
Summer Semester		Crds			
IS069IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

Junior Year (Year 3)					
Semester 5		Crds	**Semester 6**		Crds
PE014IU	Environmental Science	3	IS079IU	Scientific Writing	2
IS040IU	Management Information Systems	3	IS027IU	Scheduling & Sequencing	3
IS023IU	Inventory Management	3	IS028IU	Simulation Models in IE	4
IS059IU	Materials Handling Systems	3	IS078IU	Logistic engineering & supply chain design	3
IS082IU	Retail Management	3	BA005IU	Financial Accounting	3
IS089IU	Numerical methods	3	IS068IU	Procurement Management	3
IS___IU	**LSCM Elective Course (choose 1 course below)**	**3**	PE020IU	Ethnics and professional skills for engineers	3
IS058IU	Time series & forecasting techniques	3			
IS054IU	Engineering Drawing	3			
IS024IU	Probabilistic Models in OR	3			
IS035IU	Systems Engineering	3			
Total Credits		**21**	**Total Credits**		**21**
Summer Semester		Crds			
IS070IU	Internship 2	3			
Total Credits		**3**			

Senior Year (Year 4)					
Semester 7		Crds	**Semester 8**		Crds
IS033IU	Multi-Criteria Decision Making	3	IS048IU	Thesis research	10
IS083IU	Capstone Design	3			
IS067IU	International Transportation & Logistics	3			
IS026IU	Project Management	3			
IS___IU	**LSCM Elective Course (choose 1 course below)**	**3**			
IS025IU	Quality Management	3			
IS062IU	E-Logistics in Supply Chain Management	3			
IS063IU	Sustainability in Supply Chain	3			
IS064IU	Entrepreneurship in Supply Chain	3			
IS065IU	Supply Security and Risk Management	3			
IS066IU	Data Mining in Supply Chain	3			
IS072IU	Port Planning and Operations	3			

IS080IU	Creative Thinking	3		
BA130IU	Organizational Behavior	3		
BA032IU	Sales Management	3		
IS045IU	Leadership	3		
BA156IU	Human Resource Management	3		
BA003IU	Principles of Marketing	3		
_____IU	**Free Elective Course (choose 1 course)**	**3**		
Total Credits		**18**	**Total Credits**	**10**

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

7.2 English Level 1: TOEFL iBT ≥ 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	EN007IU	Writing AE1	2
EN075IU	Listening & speaking IE2	8	EN008IU	Listening AE1	2
PT001IU	Physical Training 1	3	PH014IU	Physics 2	2
MA001IU	Calculus 1	4	PT002IU	Physical Training 2	3
			CH012IU	Chemistry Laboratory	1
			CH011IU	Chemistry for Engineers	3
			IS056IU	Introduction to Logistics & Supply Chain Management	1
			PH013IU	Physics 1	2
			MA003IU	Calculus 2	4
Total Credits		**23**	**Total Credits**		**20**
Summer Semester		Crds			
PE015IU	Philosophy of Marxism and Leninism	3			
PE016IU	Political Economics of Marxism and Leninism	2			
EN011IU	Writing AE2	2			
EN012IU	Speaking AE2	2			
Total Credits		**9**			

Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
PH015IU	Physics 3	3	IS020IU	Engineering Economy	3
IS019IU	Production Management	3	IS081IU	Deterministic models in OR	4
IS004IU	Engineering Probability & Statistics	4	IS057IU	Warehouse Engineering Management	3
PE008IU	Critical Thinking	3	PE020IU	Ethnics and professional skills for engineers	3
IS055IU	Principles Logistics and Supply Chain	3	PE017IU	Scientific socialism	2
IS086IU	Introduction to Computing	3	MA023IU	Calculus 3	4
MA027IU	Applied Linear Algebra	2	IS073IU	Business Law	3
Total Credits		**21**	**Total Credits**		**22**
Summer Semester		Crds			
IS069IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

Junior Year (Year 3)					
Semester 5		Crds	**Semester 6**		Crds
PE014IU	Environmental Science	3	IS068IU	Procurement Management	3
BA005IU	Financial Accounting	3	IS079IU	Scientific Writing	2
IS040IU	Management Information systems	3	IS078IU	Logistic engineering & supply chain design	3
IS023IU	Inventory Management	3	IS028IU	Simulation Models in IE	4
IS059IU	Materials Handling Systems	3	IS074IU	Import – Export Management	3
IS082IU	Retail Management	3	IS027IU	Scheduling & Sequencing	3
IS___IU	**LSCM Elective Course (choose 1 course below)**	**3**	PE018IU	History of The Communist Party of Vietnam	2
IS058IU	Time series & forecasting techniques	3	PE019IU	HCM's Thoughts	2
IS054IU	Engineering Drawing	3			
IS024IU	Probabilistic Models	3			
IS035IU	Systems Engineering	3			
Total Credits		**21**	**Total Credits**		**22**
Summer Semester		Crds			
IS070IU	Internship 2	3			
Total Credits		**3**			

Senior Year (Year 4)					
Semester 7		Crds	**Semester 8**		Crds
IS083IU	Capstone Design	3	IS048IU	Thesis Research	10
IS033IU	Multi-Criteria Decision Making	3			
IS067IU	International Transportation & Logistics	3			
IS026IU	Project Management	3			
IS089IU	Numerical methods	3			
IS___IU	**LSCM Elective Course (choose 1 course below)**	**3**			
IS025IU	Quality Management	3			
IS062IU	E-Logistics in Supply Chain Management	3			
IS063IU	Sustainability in Supply Chain	3			
IS064IU	Entrepreneurship in Supply Chain	3			
IS065IU	Supply Security and Risk Management	3			
IS066IU	Data Mining In Supply Chain	3			
IS072IU	Port Planning and Operations	3			

BA130IU	Organizational Behavior	3		
BA032IU	Sales Management	3		
IS045IU	Leadership	3		
IS080IU	Creative Thinking	3		
BA003IU	Principles of Marketing	3		
BA156IU	Human Resources Management	3		
_____IU	**Free Elective Course (choose 1 course)**	**3**		
Total Credits		**21**	**Total Credits**	**10**

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

7.3 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	MA001IU	Calculus 1	4
			PT002IU	Physical Training 2	3
			IS056IU	Introduction to Logistics & Supply Chain Management	1
Total Credits		**25**	**Total Credits**		**24**
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			
Total Credits		**9**			

Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
MA027IU	Applied Linear Algebra	2	MA023IU	Calculus 3	4
IS086IU	Introduction to Computing	3	CH012IU	Chemistry Laboratory	1
IS004IU	Engineering Probability & Statistics	4	CH011IU	Chemistry for Engineers	3
PH013IU	Physics 1	2	IS081IU	Deterministic models in OR	4
PH014IU	Physics 2	2	EN011IU	Writing AE2	2
MA003IU	Calculus 2	4	EN012IU	Speaking AE2	2
PE008IU	Critical Thinking	3	PE017IU	Scientific socialism	2
			PH015IU	Physics 3	3
Total Credits		**20**	**Total Credits**		**21**
Summer Semester		Crds			
IS052IU	Internship 1	2			
	Military Training	0			
Total Credits		**2**			

Junior Year (Year 3)					
Semester 5		Crd	**Semester 6**		Crds
IS019IU	Production Management	3	IS020IU	Engineering Economy	3
IS055IU	Principles Logistics and Supply Chain	3	IS057IU	Warehouse Engineering Management	3
IS073IU	Business Law	3	BA005IU	Financial Accounting	3
IS040IU	Management Information Systems	3	PE018IU	History of The Communist Party of	2
IS023IU	Inventory Management	3	IS074IU	Import – Export Management	3
IS082IU	Retail Management	3	PE019IU	HCM' s thoughts	2
IS___IU	**LSCM Elective Course (choose 1 course below)**	**3**	PE020IU	Ethnics and professional skills for engineers	3
IS058IU	Time series & forecasting Techniques	3	PE014IU	Environmental Science	3
IS024IU	Probabilistic Models in OR	3			
IS054IU	Engineering Drawing	3			
IS035IU	Systems Engineering	3			
Total Credits		**21**	**Total Credits**		**22**
Summer semester		Crd			
IS047IU	Internship 2	3			
Total Credits		**3**			

Senior Year (Year 4)					
Semester 7		Crds	**Semester 8**		Crds
IS089IU	Numerical methods	3	IS083IU	Capstone Design	3
IS059IU	Materials Handling Systems	3	IS028IU	Simulation Models in IE	4
IS033IU	Multi-Criteria Decision Making	3	IS027IU	Scheduling & Sequencing	3
IS067IU	International Transportation & Logistics	3	IS078IU	Logistic engineering & supply chain design	3
IS026IU	Project Management	3	IS068IU	Procurement Management	3
IS___IU	**LSCM Elective Course (choose 1 course below)**	**3**	IS079IU	Scientific Writing	2
IS025IU	Quality Management	3			
BA032IU	Sales Management	3			
IS062IU	E-Logistics in Supply Chain	3			
IS063IU	Sustainability in Supply Chain	3			
IS064IU	Entrepreneurship in Supply Chain	3			
IS065IU	Supply Security and Risk Management	3			
IS066IU	Data Mining in Supply Chain	3			

IS072IU	Port Planning and Operations	3		
BA130IU	Organizational Behavior	3		
IS045IU	Leadership	3		
IS080IU	Creative Thinking	3		
BA003IU	Principles of Marketing	3		
BA156IU	Human Resources Management	3		
_____IU	**Free Elective Course (choose 1 course)**	**3**		
Total Credits		**21**	**Total Credits**	**18**
Senior Year (Year 5)				
Semester 9		Crds		
IS048IU	Thesis research	10		
Total Credits		**10**		

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

8. LOGISTICS & SCM PROGRAM (for batch 2020 and forward)

8.1 English Level 1: IELTS ≥ 6.0

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

No.	Courses code	Courses	Credits
Semester 1			
1	EN007IU	Writing AE1	2
2	EN008IU	Listening AE1	2
3	MA001IU	Calculus 1	4
4	PH013IU	Physics 1	2
5	PH014IU	Physics 2	2
6	PT001IU	Physical Training 1	3
7	CH012IU	Chemistry Laboratory	1
8	CH011IU	Chemistry for Engineers	3
		Total credits	**19**
Semester 2			
9	EN011IU	Writing AE2	2
10	EN012IU	Speaking AE2	2
11	MA003IU	Calculus 2	4
12	PE008IU	Critical Thinking	3
13	PT002IU	Physical Training 2	3
14	IS056IU	Introduction to Logistics & Supply Chain Management	1
15	PH015IU	Physics 3	3
		Total credits	**18**
Summer semester			
16	PE015IU	Philosophy of marxism and Leninism	3
17	PE016IU	Political economics of marxism and leninism	2
		Total credits	5
Semester 3			
18	IS019IU	Production Management	3
19	IS086IU	Introduction to Computing	3

20	MA027IU	Applied Linear Algebra	2
21	IS004IU	Engineering Probability & Statistics	4
22	IS055IU	Principles of Logistics and Supply Chain Management	3
23	PE017IU	Scientific socialism	2
24	IS073IU	Business Law	3
		Total credits	**20**
Semester 4			
25	IS020IU	Engineering Economy	3
26	IS081IU	Deterministic models in OR	4
27	IS057IU	Warehouse Engineering Management	3
28	MA023IU	Calculus 3	4
29	IS074IU	Import – Export Management	3
30	BA005IU	Financial Accounting	3
		Total credits	**20**
Summer semester			
31	IS069IU	***Internship 1***	2
32		Military Training	
		Total credits	**2**
Semester 5			
33	PE014IU	Environmental Science	3
34	IS040IU	Management Information Systems	3
35	IS023IU	Inventory Management	3
36	IS059IU	Materials Handling Systems	3
37	IS082IU	Retail Management	3
38	IS089IU	Numerical methods	3
	IS___IU	**Nhóm tự chọn số 01 - LSCM Elective Course (choose 1 course below)**	3
39	IS058IU	Time series & forecasting techniques	3
40	IS054IU	Engineering Drawing	3
41	IS024IU	Probabilistic Models in OR	3
42	IS035IU	Systems Engineering	3
43		***Total credits***	**21**
Semester 6			
43	IS079IU	Scientific Writing	2

44	IS027IU	Scheduling & Sequencing	3
45	IS028IU	Simulation Models in IE	4
46	IS078IU	Logistics engineering & supply chain design	3
47	PE018IU	History of the Communist Party of Vietnam	2
48	PE019IU	HCM' s thoughts	2
49	IS068IU	Procurement Management	3
50	PE020IU	Ethnics and professional skills for engineers	3
		Total credits	**22**
Summer semester			
51	IS070IU	***Internship 2***	3
		Total credits	3
Semester 7			
52	IS083IU	Capstone Design	3
53	IS033IU	Multi-Criteria Decision Making	3
54	IS067IU	International Transportation & Logistics	3
55	IS026IU	Project Management	3
	IS___IU	**Nhóm tự chọn số 02 - ISE Elective Course (choose 1 course below)**	**3**
56	IS025IU	Quality Management	3
57	IS062IU	E-Logistics in Supply chain management	3
58	IS063IU	Sustainability in Supply Chain	3
59	IS064IU	Entrepreneurship In Supply Chain	3
60	IS065IU	Supply Security And Risk Management	3
61	IS066IU	Data Mining In Supply Chain	3
62	IS072IU	Port Planning and Operations	3
63	BA130IU	Organizational Behavior	3
64	BA032IU	Sales Management	3
65	IS045IU	Leadership	3
66	IS080IU	Creative Thinking	3
67	BA003IU	Principles Of Marketing	3
68	BA156IU	Human Resources Management	3
69	**_____IU**	**Nhóm tự chọn số 03 - Free Elective Course (choose 1 course)**	**3**

		Total credits	**18**
Semester 8			
70	IS071IU	**Thesis research**	10
		Total credits	**10**

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

8.2 English Level 2: 5.5 ≤ IELTS < 6.0

TOTAL CREDITS: 162 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)

No.	Courses code	Courses	Credits
Semester 1			
1	ENTP03	Intensive English 3- Twinning Program (*)	10
2	PT001IU	Physical Training 1	3
3	MA001IU	Calculus 1	4
		Total credits	**17**
Semester 2			
4	EN007IU	Writing AE1	2
5	EN008IU	Listening AE1	2
6	CH012IU	Chemistry Laboratory	1
7	CH011IU	Chemistry for Engineers	3
8	PH014IU	Physics 2	2
9	PT002IU	Physical Training 2	3
10	IS056IU	Introduction to Logistics & Supply Chain Management	1
11	PH013IU	Physics 1	2
12	MA003IU	Calculus 2	4
		Total credits	**20**
Summer Semester			
13	EN011IU	Writing AE2	2
14	EN012IU	Speaking AE2	2
15	PE015IU	Philosophy of marxism and Leninism	3
16	PE016IU	Political economics of marxism and leninism	2
		Total credits	**9**
Semester 3			
17	PH015IU	Physics 3	3
18	IS019IU	Production Management	3
19	IS004IU	Engineering Probability & Statistics	4
20	PE008IU	Critical Thinking	3

21	IS055IU	Principles Logistics and Supply Chain Management	3
22	IS086IU	Introduction to Computing	**3**
23	MA027IU	Applied Linear Algebra	2
		Total credits	**21**
Semester 4			
24	MA023IU	Calculus 3	4
25	IS020IU	Engineering Economy	3
26	IS081IU	Deterministic models in OR	4
27	IS057IU	Warehouse Engineering Management	3
28	BA005IU	Financial Accounting	3
29	PE020IU	Ethnics and professional skills for engineers	3
30	PE017IU	Scientific socialism	2
		Total credits	**22**
Summer semester			
31	***IS069IU***	***Internship 1***	***2***
32		Military Training	
		Total credits	2
Semester 5			
33	PE014IU	Environmental Science	3
34	IS073IU	Business Law	3
35	IS040IU	Management Information systems	3
36	IS023IU	Inventory Management	3
37	IS059IU	Materials Handling Systems	3
38	IS082IU	Retail Management	3
	IS___IU	**Nhóm tự chọn số 01 - LSCM Elective Course (choose 1 course below)**	**3**
39	IS058IU	Time series & forecasting techniques	3
40	IS054IU	Engineering Drawing	3
41	IS024IU	Probabilistic Models in OR	3
42	IS035IU	Systems Engineering	3
		Total credits	**21**

Semester 6			
43	IS068IU	Procurement Management	3
44	IS079IU	Scientific Writing	2
45	IS078IU	Logistic engineering & supply chain design	3
46	IS028IU	Simulation Models in IE	4
47	IS074IU	Import – Export Management	3
48	IS027IU	Scheduling & Sequencing	3
49	PE018IU	History of the Communist Party of Vietnam	2
50	PE019IU	HCM' s thoughts	2
		Total credits	**22**
Summer semester			
51	IS070IU	***Internship 2***	3
		Total credits	3
Semester 7			
52	IS083IU	Capstone Design	3
53	IS033IU	Multi-Criteria Decision Making	3
54	IS067IU	International Transportation & Logistics	3
55	IS026IU	Project Management	3
56	IS089IU	Numerical methods	3
	IS___IU	**Nhóm tự chọn số 02 - ISE Elective Course (choose 1 course below)**	**3**
57	IS025IU	Quality Management	3
58	IS062IU	E-Logistics in Supply chain management	3
59	IS063IU	Sustainability in Supply Chain	3
60	IS064IU	Entrepreneurship In Supply Chain	3
61	IS065IU	Supply Security And Risk Management	3
62	IS066IU	Data Mining In Supply Chain	3
63	IS072IU	Port Planning and Operations	3
64	BA130IU	Organizational Behavior	3
65	BA032IU	Sales Management	3
66	IS045IU	Leadership	3
67	IS080IU	Creative Thinking	3

68	BA003IU	Principles Of Marketing	3
69	BA156IU	Human Resources Management	3
70	**_____IU**	**Nhóm tự chọn số 03 - ISE Elective Course (choose 1 course)**	**3**
		Total credits	**21**
Semester 8			
71	IS071IU	Thesis research	10
		Total credits	**10**

(*) The English level ENTP03 - Intensive English 3- Twinning Program lasts 7 weeks

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

8.3 English Level 3: 5.0 ≤ IELTS < 5.5

TOTAL CREDITS: 175 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)

No.	Courses code	Courses	Credits
Semester 1			
1	ENTP02	Intensive English 2 - Twinning Program (*)	13
2	ENTP03	Intensive English 3 - Twinning Program (*)	10
3	PT001IU	Physical Training 1	3
		Total credits	**26**
Semester 2			
4	EN007IU	Writing AE1	2
5	EN008IU	Listening AE1	2
6	CH012IU	Chemistry Laboratory	1
7	CH011IU	Chemistry for Engineers	3
8	PH014IU	Physics 2	2
9	MA003IU	Calculus 2	4
10	IS056IU	Introduction to Logistics & Supply Chain Management	1
11	PH013IU	Physics 1	2
12	MA027IU	Applied Linear Algebra	2
		Total credits	**19**
Summer Semester			
13	PT002IU	Physical Training 2	3
14	EN011IU	Writing AE2	2
15	EN012IU	Speaking AE2	2
16	PE015IU	Philosophy of marxism and Leninism	3
17	PE016IU	Political economics of marxism and Leninism	2
		Total credits	**12**
Semester 3			
18	PH015IU	Physics 3	3
19	IS019IU	Production Management	3

20	IS004IU	Engineering Probability & Statistics	4
21	PE008IU	Critical Thinking	3
22	IS055IU	Principles Logistics and Supply Chain Management	3
23	IS086IU	Introduction to Computing	3
24	MA003IU	Calculus 2	4
		Total credits	**23**
Semester 4			
25	MA023IU	Calculus 3	4
26	IS020IU	Engineering Economy	3
27	IS081IU	Deterministic models in OR	4
28	IS057IU	Warehouse Engineering Management	3
29	BA005IU	Financial Accounting	
30	PE020IU	Ethnics and professional skills for engineers	3
31	PE017IU	Scientific socialism	2
		Total credits	**22**
Summer semester			
32	***IS069IU***	***Internship 1***	***2***
33		Military Training	
		Total credits	**2**
Semester 5			
34	PE014IU	Environmental Science	3
35	IS073IU	Business Law	3
36	IS040IU	Management Information systems	3
37	IS023IU	Inventory Management	3
38	IS059IU	Materials Handling Systems	3
39	IS082IU	Retail Management	3
	IS___IU	**Nhóm tự chọn số 01 - LSCM Elective Course (choose 1 course below)**	**3**
40	IS058IU	Time series & forecasting techniques	3
41	IS054IU	Engineering Drawing	3
42	IS024IU	Probabilistic Models in OR	3
43	IS035IU	Systems Engineering	3

		Total credits	**21**
Semester 6			
44	IS068IU	Procurement Management	3
45	IS079IU	Scientific Writing	2
46	IS078IU	Logistic engineering & supply chain design	3
47	IS028IU	Simulation Models in IE	4
48	IS074IU	Import – Export Management	3
49	IS027IU	Scheduling & Sequencing	3
50	PE018IU	History of the Communist Party of Vietnam	2
51	PE019IU	HCM' s thoughts	2
		Total credits	**22**
Summer semester			
52	IS070IU	***Internship 2***	3
		Total credits	**3**
Semester 7			
53	IS083IU	Capstone Design	3
54	IS033IU	Multi-Criteria Decision Making	3
55	IS067IU	International Transportation & Logistics	3
56	IS026IU	Project Management	3
57	IS089IU	Numerical methods	3
	IS___IU	**Nhóm tự chọn số 02 - ISE Elective Course (choose 1 course below)**	**3**
58	IS025IU	Quality Management	3
59	IS062IU	E-Logistics in Supply chain management	3
60	IS063IU	Sustainability in Supply Chain	3
61	IS064IU	Entrepreneurship In Supply Chain	3
62	IS065IU	Supply Security And Risk Management	3
63	IS066IU	Data Mining In Supply Chain	3
64	IS072IU	Port Planning and Operations	3
65	BA130IU	Organizational Behavior	3
66	BA032IU	Sales Management	3
67	IS045IU	Leadership	3

68	IS080IU	Creative Thinking	3
69	BA003IU	Principles Of Marketing	3
70	BA156IU	Human Resources Management	3
71	**IS___IU**	**Nhóm tự chọn số 03 - ISE Elective Course (choose 1 course)**	**3**
		Total credits	**21**
Semester 8			
72	IS071IU	Thesis research	10
		Total credits	**10**

(*) The English level Intensive English 2- Twinning Program and ENTP03 - Intensive English 3- Twinning Program last 7 weeks

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

8.4 English Level 4: 3.5 ≤ IELTS ≤ 4.5

TOTAL CREDITS: 192 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)

No.	Courses code	Courses	Credits
Semester 1			
1	ENTP01	Intensive English 1- Twinning Program (*)	17
2	ENTP02	Intensive English 2- Twinning Program (*)	13
		Total credits	**30**
Semester 2			
3	ENTP03	Intensive English 3- Twinning Program (*)	10
4	PH013IU	Physics 1	2
5	PH014U	Physics 2	2
6	MA001IU	Calculus 1	4
7	PT001IU	Physical Training 1	3
		Total credits	**21**
Summer semester			
8	PE015IU	Philosophy of marxism and Leninism	3
9	PE016IU	Political economics of marxism and leninism	2
10	EN007IU	Writing AE1	2
11	EN008IU	Listening AE1	2
12	PT002IU	Physical Training 2	3
		Total credits	**12**
Semester 3			
13	IS056IU	Introduction to Logistics & Supply Chain Management	1
14	IS086IU	Introduction to Computing	3
15	MA027IU	Applied Linear Algebra	2
16	IS004IU	Engineering Probability & Statistics	4
17	CH012IU	Chemistry Laboratory	1
18	CH011IU	Chemistry for Engineers	3
19	PE008IU	Critical Thinking	3
20	MA003IU	Calculus 2	4
		Total credits	**21**
Semester 4			

21	MA023IU	Calculus 3	**4**
22	IS081IU	Deterministic models in OR	4
23	EN011IU	Writing AE2	2
24	EN012IU	Speaking AE2	2
25	PH015IU	Physics 3	3
26	PE017IU	Scientific socialism	2
		Total credits	**17**
Summer semester			
27	IS069IU	***Internship 1***	2
28		Military Training	
		Total credits	**2**
Semester 5			
29	IS019IU	Production Management	3
30	IS055IU	Principles Logistics and Supply Chain Management	3
31	IS082IU	Retail Management	3
32	IS073IU	Business Law	3
33	IS040IU	Management Information Systems	3
34	IS023IU	Inventory Management	3
	IS___IU	**Nhóm tự chọn số 01 - LSCM Elective Course (choose 1 course below)**	**3**
35	IS058IU	Time series & forecasting techniques	3
36	IS024IU	Probabilistic Models in OR	3
37	IS054IU	Engineering Drawing	3
38	IS035IU	Systems Engineering	3
		Total credits	**21**
Semester 6			
39	IS020IU	Engineering Economy	3
40	IS057IU	Warehouse Engineering Management	3
41	BA005IU	Financial Accounting	3
42	IS074IU	Import – Export Management	3
43	PE018IU	History of the Communist Party of Vietnam	2
44	PE019IU	**HCM' s thoughts**	2
45	PE020IU	Ethnics and professional skills for engineers	3
46	PE014IU	Environmental Science	3

		Total credits	**22**
Summer semester			
47	IS070IU	***Internship 2***	3
		Total credits	3
Semester 7			
48	IS089IU	Numerical methods	3
49	IS059IU	Materials Handling Systems	3
50	IS033IU	Multi-Criteria Decision Making	3
51	IS067IU	International Transportation & Logistics	3
52	IS026IU	Project Management	3
	IS___IU	**Nhóm tự chọn số 02 - ISE Elective Course (choose 1 course below)**	**3**
53	IS025IU	Quality Management	3
54	IS062IU	E-Logistics in Supply chain management	3
55	IS063IU	Sustainability in Supply Chain	3
56	IS064IU	Entrepreneurship In Supply Chain	3
57	IS065IU	Supply Security And Risk Management	3
58	IS066IU	Data Mining In Supply Chain	3
59	IS072IU	Port Planning and Operations	3
60	BA130IU	Organizational Behavior	3
61	BA032IU	Sales Management	3
62	IS045IU	Leadership	3
63	IS080IU	Creative Thinking	3
64	BA003IU	Principles Of Marketing	3
65	BA156IU	Human Resources Management	3
	____IU	**Nhóm tự chọn số 03 - Free Elective Course (choose 1 course)**	**3**
		Total credits	**21**
Semester 8			
66	IS083IU	Capstone Design	**3**
67	IS028IU	Simulation Models in IE	4
68	IS027IU	Scheduling & Sequencing	3
69	IS078IU	Logistic engineering & supply chain design	3

70	IS068IU	Procurement Management	3
71	IS079IU	Scientific Writing	2
		Total credits	**18**
Semester 9			
72	IS071IU	Thesis research	10
		Total credits	**10**

(*) The English level Intensive English 1-Twinning Program; ENTP02 - Intensive English 2- Twinning Program and ENTP03 - Intensive English 3- Twinning Program last 7 weeks

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

8.5 English Level 5: IELTS ≤ 3.0

TOTAL CREDITS: 209 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)

No.	Courses code	Courses	Credits
Semester 1			
1	ENTP00	Intensive English 0- Twinning Program (*)	17
2	ENTP01	Intensive English 1- Twinning Program (*)	17
		Total credits	**34**
Semester 2			
3	ENTP02	Intensive English 2- Twinning Program (*)	13
4	ENTP03	Intensive English 3- Twinning Program (*)	10
5	PT001IU	Physical Training 1	3
		Total credits	**26**
Summer semester			
6	PT002IU	Physical Training 2	3
7	PE016IU	Political economics of marxism and leninism	2
8	PE015IU	Philosophy of marxism and Leninism	3
9	EN007IU	Writing AE1	2
10	EN008IU	Listening AE1	2
		Total credits	**12**
Semester 3			
9	IS056IU	Introduction to Logistics & Supply Chain Management	1
10	IS086IU	Introduction to Computing	3
11	MA027IU	Applied Linear Algebra	2
12	IS004IU	Engineering Probability & Statistics	4
13	PH013IU	Physics 1	2
14	PH014IU	Physics 2	2
15	PE017IU	Scientific socialism	2
16	PE008IU	Critical Thinking	3
17	MA003IU	Calculus 1	4
		Total credits	**22**
Semester 4			
18	MA003IU	Calculus 2	4

19	CH012IU	Chemistry Laboratory	**1**
20	CH011IU	Chemistry for Engineers	**3**
21	IS081IU	Deterministic models in OR	4
22	MA023IU	Calculus 3	**4**
23	PH015IU	Physics 3	3
24	EN011IU	Writing AE2	2
25	EN012IU	Speaking AE2	2
		Total credits	**23**
Summer semester			
26	IS069IU	***Internship 1***	2
		Military Training	
		Total credits	**2**
Semester 5			
27	IS019IU	Production Management	3
28	IS055IU	Principles Logistics and Supply Chain Management	3
29	IS082IU	Retail Management	3
30	IS073IU	Business Law	3
31	IS040IU	Management Information Systems	3
32	IS023IU	Inventory Management	3
	IS___IU	**Nhóm tự chọn số 01 - LSCM Elective Course (choose 1 course below)**	**3**
33	IS058IU	Time series & forecasting techniques	3
34	IS024IU	Probabilistic Models in OR	3
35	IS054IU	Engineering Drawing	3
36	IS035IU	Systems Engineering	3
		Total credits	**21**
Semester 6			
37	IS020IU	Engineering Economy	3
38	IS057IU	Warehouse Engineering Management	3
39	BA005IU	Financial Accounting	3
40	IS074IU	Import – Export Management	3
41	PE018IU	History of the Communist Party of Vietnam	2
42	PE019IU	HCM’ s thoughts	2

43	PE020IU	Ethnics and professional skills for engineers	3
44	PE014IU	Environmental Science	3
		Total credits	**22**
Summer semester			
45	IS070IU	***Internship 2***	3
		Total credits	3
Semester 7			
46	IS089IU	Numerical methods	3
47	IS059IU	Materials Handling Systems	3
48	IS033IU	Multi-Criteria Decision Making	3
49	IS067IU	International Transportation & Logistics	3
50	IS026IU	Project Management	3
	IS___IU	**Nhóm tự chọn số 02 - ISE Elective Course (choose 1 course below)**	**3**
51	IS025IU	Quality Management	3
52	IS062IU	E-Logistics in Supply chain management	3
53	IS063IU	Sustainability in Supply Chain	3
54	IS064IU	Entrepreneurship In Supply Chain	3
55	IS065IU	Supply Security And Risk Management	3
56	IS066IU	Data Mining In Supply Chain	3
57	IS072IU	Port Planning and Operations	3
58	BA130IU	Organizational Behavior	3
59	BA032IU	Sales Management	3
60	IS045IU	Leadership	3
61	IS080IU	Creative Thinking	3
62	BA003IU	Principles Of Marketing	3
63	BA156IU	Human Resources Management	3
64	**____IU**	**Nhóm tự chọn số 03 - Free Elective Course (choose 1 course)**	**3**
		Total credits	**21**
Semester 8			
65	IS083IU	Capstone Design	**3**
66	IS028IU	Simulation Models in IE	4

67	IS027IU	Scheduling & Sequencing	3
68	IS078IU	Logistic engineering & supply chain design	3
69	IS068IU	Procurement Management	3
70	IS079IU	Scientific Writing	2
		Total credits	**18**
Semester 9			
71	IS071IU	Thesis research	10
		Total credits	**10**

(*) The English level Intensive English 0- Twinning Program ENTP00; Intensive English 1-Twinning Program; ENTP02 - Intensive English 2- Twinning Program and ENTP03 - Intensive English 3- Twinning Program last 7 weeks

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

TWINING PROGRAM

(Curricula for the first two years in IU)

9. IU-SB PROGRAM (The State University of New York, University at Binghamton) (For batch 2020 and forwards)

9.1 English Level 1: IELTS ≥ 6.0

TOTAL CREDITS: 49 (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
EN007SB	Writing AE1	2	EN011SB	Writing AE2	2
EN008SB	Listening AE1	2	EN012SB	Speaking AE2	2
MA001SB	Calculus 1	4	MA003SB	Calculus 2	4
PH013SB	Physics 1	2	PH014SB	Physics 2	2
CH011SB	Chemistry for Engineers	3	PT002SB	Physical Training 2	3
CH012SB	Chemistry Laboratory	1	IS001SB	Introduction to Industrial Engineering	1
PT001SB	Physical Training 1	3			
Total Credits		**17**	**Total Credits**		**14**

Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
MA024SB or MA023SB	Differential Equations or Cal 3	4	IS017SB	Human Factors	4
PH015SB	Physics 3	3	IS020SB	Engineering Economy	3
PH016SB	Physics 3 Lab	1	PH012SB	Physics 4	2
PE008SB	Critical Thinking	3			
IS004SB	Engineering Probability	4			
Total Credits		**15**	**Total Credits**		**9**

ID	*Subject*	*Crds*	*Note*
EDD 111	Introduction to Engineering Design		*
EDD 112	Introduction to Engineering Analysis		*
ME 273	Statics		**

Note:	
(*)	Students must study programming subjects. This course is online in consultation with the Counselor of Watson (Binghamton University). Study in the summer before transition
(**)	Subjects must be taken in the summer before transferring, online learning through Binghamton University

9.2 English Level 2: 5.5 ≤ IELTS < 6.0

TOTAL CREDITS: 59 (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
ENPT03	Intensive English 3 – Twinning Program	10	EN007SB	Writing AE1	2
MA001SB	Calculus 1	4	EN008SB	Listening AE1	2
PH013SB	Physics 1	2	MA003SB	Calculus 2	4
PT001SB	Physical Training 1	3	PH014SB	Physics 2	2
			CH011SB	Chemistry for Engineers	3
			CH012SB	Chemistry Laboratory	1
			PT002SB	Physical Training 2	3
			IS001SB	Introduction to Industrial Engineering	1
Total Credits		**19**	**Total Credits**		**18**

Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
EN011SB	Writing AE2	2	IS017SB	Human Factors	4
EN012SB	Listening AE2	2	IS020SB	Engineering Economy	3
MA024SB or MA023SB	Differential Equations or Calculus 3	4	PH012SB	Physics 4	2
IS004SB	Engineering Probability	4			
PH015SB	Physics 3	3			
PH016SB	Physics 3 Lab	1			
PE008SB	Critical Thinking	3			
Total Credits		**19**	**Total Credits**		**9**

ID	*Subject*	*Crds*	*Note*
EDD 111	Introduction to Engineering Design		*
EDD 112	Introduction to Engineering Analysis		*
ME 273	Statics		**

Note:	
(*)	Students must study programming subjects. This course is online in consultation with the Counselor of Watson (Binghamton University). Study in the summer before transition
(**)	Subjects must be taken in the summer before transferring, online learning through Binghamton University

9.3 English Level 3: 5.0 ≤ IELTS < 5.5

TOTAL CREDITS: 72 (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
ENTP02	Intensive English 2 - Twinning Program	13	EN007SB	Writing AE1	2
ENTP03	Intensive English 3 - Twinning Program	10	EN008SB	Listening AE1	2
PT001SB	Physical Training 1	3	PT002SB	Physical training 2	3
			IS001SB	Introduction to Industrial Engineering	1
			MA001SB	Calculus 1	4
			PH013SB	Physics 1	2
Total Credits		**26**	**Total Credits**		**14**
Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
EN011SB	Writing AE2	2	PH015SB	Physics 3	3
EN012SB	Listening AE2	2	PH016SB	Physics 3 Lab	1
MA003SB	Calculus 2	4	IS017SB	Human Factors	4
PH014SB	Physics 2	2	IS020SB	Engineering Economy	3

IS004SB	Engineering Probability	4			
Total Credits		**14**	**Total Credits**		**11**

Junior Year (Year 3)					
Semester 5		Crds			
MA024SB or MA023SB	Differential Equations or Cal 3	4			
PE008SB	Critical thinking	3			
CH011SB	Chemistry for Engineers	3			
CH012SB	Chemistry Laboratory	1			
PH012SB	Physics 4	2			
Total Credits		**13**			

ID	***Subject***	***Crds***	***Note***
EDD 111	Introduction to Engineering Design		*
EDD 112	Introduction to Engineering Analysis		*
ME 273	Statics		**

Note:	
(*)	Students must study programming subjects. This course is online in consultation with the Counselor of Watson (Binghamton University). Study in the summer before transition
(**)	Subjects must be taken in the summer before transferring, online learning through Binghamton University

9.4 English Level 4: 3.5 ≤ IELTS ≤ 4.5

TOTAL CREDITS: 89 (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
ENTP02	Intensive English 1 - Twinning Program	17	ENTP03	Intensive English 3 - Twinning Program	10
ENTP03	Intensive English 2 - Twinning Program	13	MA001SB	Calculus 1	4
			PH013SB	Physics 1	2
			PT001SB	Physical Training 1	3
Total Credits		**30**	**Total Credits**		**19**
Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
EN007SB	Writing AE1	2	PH015SB	Physics 3	3
EN008SB	Listening AE1	2	PH016SB	Physics 3 Lab	1
MA003SB	Calculus 2	4	EN011SB	Writing AE2	2
PH014SB	Physics 2	2	EN012SB	Listening AE2	2
IS004SB	Engineering Probability	4	IS017SB	Human Factors	4
IS001SB	Introduction to Industrial Engineering	1	IS020SB	Engineering Economy	3
PT002SB	Physical Training 2	3			
Total Credits		**18**	**Total Credits**		**15**

Junior Year (Year 3)					
Semester 5		Crds			
MA024SB or MA023SB	Differential Equations or Cal 3	4			
CH011SB	Chemistry for Engineers	3			
CH012SB	Chemistry Laboratory	1			
PE008SB	Critical thinking	3			
PH012SB	Physics 4	2			
Total Credits		**13**			

ID	*Subject*	*Crds*	*Note*
EDD 111	Introduction to Engineering Design		*
EDD 112	Introduction to Engineering Analysis		*
ME 273	Statics		**

Note:	
(*)	Students must study programming subjects. This course is online in consultation with the Counselor of Watson (Binghamton University). Study in the summer before transition
(**)	Subjects must be taken in the summer before transferring, online learning through Binghamton University

9.5 English Level 5: IELTS ≤ 3.0

TOTAL CREDITS: 106 (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
ENTP02	Intensive English 0 - Twinning Program	17	ENTP02	Intensive English 2- Twinning Program	13
ENTP03	Intensive English 1 - Twinning Program	17	ENTP03	Intensive English 3- Twinning Program	10
			PT001SB	Physical Training 1	3
Total Credits		**34**	**Total Credits**		**26**
Sophomore Year (Year 2)					
Semester 3		Crds	**Semester 4**		Crds
EN007SB	Writing AE1	2	EN011SB	Writing AE2	2
EN008SB	Listening AE1	2	EN012SB	Listening AE2	2
MA001SB	Calculus 1	4	MA003SB	Calculus 2	4
PH013SB	Physics 1	2	PH014SB	Physics 2	2
IS004SB	Engineering Probability	4	IS017SB	Human Factors	4
IS001SB	Introduction to Industrial Engineering	1			
PT002SB	Physical traning 2	3			
Total Credits		**18**	**Total Credits**		**14**

Junior Year (Year 3)					
Semester 5		Crds	**Semester 6**		Crds
MA024SB or MA023SB	Differential Equations or Cal 3	4	CH011SB	Chemistry for Engineers	3
PE008SB	Critical thinking	3	CH012SB	Chemistry Laboratory	1
PH015SB	Physics 3	3	IS020SB	Engineering Economy	3
PH016SB	Physics 3 Lab	1	PH012SB	Physics 4	2
Total Credits		**11**	**Total Credits**		**9**

ID	*Subject*	*Crds*	*Note*
EDD 111	Introduction to Engineering Design		*
EDD 112	Introduction to Engineering Analysis		*
ME 273	Statics		**

Note:	
(*)	Students must study programming subjects. This course is online in consultation with the Counselor of Watson (Binghamton University). Study in the summer before transition
(**)	Subjects must be taken in the summer before transferring, online learning through Binghamton University

Subject to change. The SB ISE curricula for students whose TOEFL scores below 500 provided here are just examples based on their English levels at the year of intake. The subjects to be taken are usually fixed in the freshmen year but might be varied in the years following, depending on their progress in English which is frequently assessed by every semester. The students will be counseled by their appointed advisors on the subjects to be taken in the new semester.

10. COURSE DESCRIPTION

EN007IU Writing Academic English 1 2 credits

This course provides students with instruction and practice in essay writing, including transforming ideas into different functions of writing such as definitions, classifications, cause – effects, arguments. Through reading a few representative university-level texts, students will develop the ability to read critically and write accurately, coherently, and in appropriate academic style in response to those texts. They will also practice necessary skills to write a research report.

EN008IU Listening Academic English 1 2 credits

To provide students with the study skills needed to listen to academic lectures, take effective notes and prepare for examinations.

EN011IU Writing Academic English 2 2 credits

This course provides an overview of the organizational format for a research paper and assists students in completing research projects in any content area course by providing assistance in writing effective research papers using a step-by-step process approach. Course content includes the components of a research paper, and techniques of selecting and narrowing topics; writing argumentative thesis statements; outlining; locating and documenting sources; taking notes. Students also have to read extensively about a chosen topic to explore different ideas of multiple authors about that topic. Students work with projects relating to their content area courses.

Prerequisite: *EN007 & EN008 (Academic English 1)*

EN012IU Speaking Academic English 2 2 credits

Students are provided with practical strategies for effective presentations. They also have chance to practice giving presentations in class and receive feedback.

Prerequisite: *EN007 & EN008 (Academic English 1)*

PE011IU Principles of Marxism 5 credits

The first chapter will give a general introduction about the Marxism and the content of the course. The remaining part of the course will be divided into three sections: Section 1 includes the basic concepts of the worldview and methodology of Marxism; Section 2 covers the economic theory of Marxism on the capitalist modes of production; Section 3 includes basic reasoning of Marxism on the socialism and the prospects of real socialism.

PE012IU HCM' s Thoughts 2 credits

The course includes 7 chapters: Chapter 1 presents the basis and the development process of Ho Chi Minh's thoughts; the remaining chapters cover the basic contents of Ho Chi Minh's thoughts according to the course objectives.

PE013IU Revolutionary Lines of Vietnamese Communist Party 3 credits

The course will provide students with the basic knowledge of the revolutionary lines of the Party, especially in the innovative periods.

PE015IU Philosophy of Marxism and Leninism 3 credits

The course equips students with basic content about the worldview, Marxist - Lenin philosophical methodology, helps students apply the knowledge of the world view, Marxist - Leninist philosophical methodology. creativity in cognitive and practical

activities, in order to solve the problems that the social life of the country and of the times are posing.

PE016IU Political Economics of Marxism and Leninism 2 credits

- Firstly, equip students with the basic and core knowledge of Marxist - Leninist Political Economy in the context of the country's economic development and the world today. Ensuring the basics, systems, science, updating new knowledge, attaching to reality, creativity, skills, thinking, learners' quality, interconnection to overcome duplication, enhance integration and reduce the load, reduce the content that is no longer suitable or the content that is scholastic for students of colleges and universities that are not specialized in theory.
- Secondly, on the basis of forming the mindset, the skills of analyzing, evaluating and identifying the nature of economic benefit relations in the country's socio-economic development contribute to helping students build Suitable social responsibilities in job position and life after graduation.
- Thirdly, contributing to building a stance and Marxist - Leninist ideology for students

PE017IU Scientific Socialism 2 credits

The course equips students with basic content about the worldview, Marxist - Lenin philosophical methodology, helps students apply the knowledge of the world view, Marxist - Leninist philosophical methodology. creativity in cognitive and practical activities, in order to solve the problems that the social life of the country and of the times are posing.

PE018IU History of The Communist Party of Vietnam 2 credits

- Regarding the content: providing the systematic and basic knowledge about the establishment of the Communist Party of Vietnam (1920-1930), the Party's leadership for the Vietnamese revolution in the struggle period. government (1930-1945), during the two resistance wars against French colonialism and American imperialism (1945-1975), in the cause of building and defending the country during the transition period to socialism, undertaking renovation (1975-2018)
- Regarding ideology: Through historical events and experiences of the Party's leadership to build a sense of respect for objective truth, improve pride and confidence in the Party's leadership career. .
- About skills: Equipping scientific thinking method about history, skills of selecting research materials, studying subjects and the ability to apply historical awareness of practical work, criticizing misconceptions left about the history of the Party.

MA001IU Calculus 1 4 credits

Functions; Limits; Continuity; Derivatives, Differentiation, Derivatives of Basic Elementary Functions, Differentiation Rules; Applications of Differentiation: L'Hôpital's Rule, Optimization, Newton's Method; Anti-derivatives; Indefinite Integrals, Definite Integrals, Fundamental Theorem of Calculus; Techniques of Integration; Improper Integrals; Applications of Integration.

MA003IU Calculus 2 4 credits

Sequence and Series; Convergence Tests; Power Series; Taylor and Maclaurin Series; Cartesian Coordinates; Lines, Planes and Surfaces; Derivatives and Integrals of Vector Functions, Arc Length and Curvature, Parametric Surfaces; Functions of Several Variables; Limits, Continuity, Partial Derivatives, Tangent Planes; Gradient Vectors; Extrema; Lagrange Multipliers; Multiple Integrals: Double Integrals, Triple Integrals, Techniques of Integration; Vector Fields, Line Integrals, Surface Integrals.

Prerequisite: *MA001 (Calculus 1)*

MA023IU Calculus 3 4 credits

Complex numbers, complex series, complex functions, complex derivatives; Laplace transform, z-transform, Fourier series, Fourier transform, the inverse transform, transforms of derivatives and integrals, first-order differential equations, second-order differential equations, difference equations, applications to electrical circuits and signal processing.

Prerequisite: *MA003 (Calculus 2)*

MA024IU Differential Equations 2 credits

First-order differential equations, second-order linear differential equations, undetermined coefficients, variation of parameters, applications, higher-order linear differential equations, systems of first-order linear equations, elementary partial differential equations and the method of separation of variables.

Prerequisite: *MA003 (Calculus 2)*

MA027IU Applied Linear Algebra 2 credits

The course provides the student with basic knowledge in linear algebra with applications, in particular the skill of solving linear systems of equations using Gauss elimination method.

Prerequisite: *None*

MA027IU Numerical Methods 3 credits

Analysis of errors, matrices, systems of linear equations, approximation theory, numerical solutions of systems of non-linear equations, interpolation, discrimination and integral calculus, solving numerical equations, finding sum of series, introduction to generating and simulating random numbers, introduction to linear and programming simulation. Programming and application projects will be highlighted.

Prerequisite: *None*

PH013IU Physics 1 2 credits

An introduction to mechanics including: planar forces, free body diagrams, planar equilibrium of rigid bodies, friction, distributed forces, shear force and bending moment diagrams, simple stress and strain and associated material properties, kinematics and kinetic of particles, work and energy, motion of rigid bodies in a plane.

PH014IU Physics 2 2 credits

This course provides students basic knowledge about fluid mechanics; macroscopic description of gases; heat and the first law of thermodynamics; heat engines and the second law of thermodynamics; microscopic description of gases and the kinetic theory of gases.

PH015IU Physics 3 3 credits

To provide a thorough introduction to the basic principles of physics to physics and engineering students in order to prepare them for further study in physics and to support their understanding and design of practical applications in their fields. Content: Electrostatics, particles in electric and magnetic fields, electromagnetism, circuits, Maxwell's equations, electromagnetic radiation.

***Co-requisite**: PH016 (Physic 3 Laboratory)*

PH016IU Physics 3 Lab 1 credit

Physics 3 Lab is an experimental course on electricity and magnetism given to undergraduate students who attended Physics 3 (Electricity and Magnetism). Each student will do eight different experiments in a small group, and then write a lab report based on the experimental results.

PH012IU Physics 4 2 credits

- Know and understand basic physical processes and phenomena.
- Solve basic physics problem by applying both theoretical and experimental techniques.
- Understand and acquire skills needed to use physical laws governing real process and to solve them in the engineering environment.

CH011IU Chemistry for Engineers 3 credits

This course is designed for non-chemistry majors, as it is intended for students pursuing a degree in information technology, electronic and telecommunication. The course is designed to provide a strong background in the fundamentals of chemistry, preparing students for further study in their major field. Topics include important principles, theories, concepts of chemistry, and chemical calculations necessary for a comprehension of the structure of matter, the chemical actions of the common elements and compounds. The impact of chemistry on everyday life and on the environment is also introduced wherever possible.

Prerequisite: *Co-requisite: CH012 (Chemistry for Engineers Laboratory)*

CH012IU Chemistry Laboratory 1 credit

This course is designed for non-chemistry majors, as it is intended for students pursuing a degree in information technology, electronic and telecommunication. The
course introduces the lab-work with emphasis on techniques relevant to engineering in chemistry.

Prerequisite: *None*

PE008IU Critical Thinking 3 credits

This course aims to introduce to you the fundamentals of critical thinking. Its course integrates basic critical thinking, persuasive communication, and related errors in thinking lessons with examination of arguments from several sources, including literature, politics, commercials, and the media.

The primary focus of this course is the development of critical skills. To this end, you will learn to identify common fallacies, reflect on the use of language for the purpose of presentation, and think critically about ethical judgments, advertisement, TV and film, magazines and newspapers.

IS001IU Introduction to Industrial Engineering 1 credit

Introduction to basic engineering concepts. Opportunities are provided to develop skills in oral and written communication, and department-specific material. Case studies are presented and analyzed.

IS003RG Introduction to Microeconomic 3 credits

This course seeks to provide an in-depth understanding of basic economic concepts and scare resources, market in which supply, demand and prices are examined in connection with consumers as well as producer behavior. The students can also evaluate various types of market structures as well as the Government intervention into the market. The subject also provides the students with necessary abilities to evaluate economic variables of efficiency. All of the help students plan for a company's short-run and long-run development more effectively with consideration of effects of the government's policies.

IS004IU Engineering Probability & Statistics 4 credits

The aim of this course is to examine various concepts in probability and statistics. This course also discusses various statistical techniques and the use of them in practical situations. Key topics of this course include: descriptive statistics, discrete and continuous random variables, sampling and sampling distributions, confidence intervals, hypothesis testing, analysis of variance, simple linear and multiple regressions.

IS004RG Mechanics of Solids 3 credits

Axial force, shear, moment, and torque in structural members; stress, strain, and stress-strain relations; principal stresses and strains; torsion of circular shafts; bending of singly symmetric beams; compound loading; buckling of columns; statically indeterminate systems.

IS005IU Engineering Mechanics – Statics 3 credits

The classification of systems of forces and their resultants; geometrical and analytical conditions for the equilibrium of force systems, frames and trusses, friction, parabolic and catenary cables, centers of gravity.

IS012RG Introduction to Macro economics 3 credits

Knowledge in the subject would enable the students not only to understand various broad economic issues of a country or a region but also to evaluate macroeconomic policies as well as economic fluctuations both in a country and in the world. The subject also provides the students with necessary abilities to evaluate economic variables as a whole. All of this helps the students plan for a company's short- run and long-run development more effectively with consideration of effects of the government's macroeconomic policies.

IS014RG Analytical Physics 2B 3 credits

The course covers the fundamental ideas of geometrical and wave optics and of modern physics (relativity, quantum, atomic, nuclear and particle physics). It thus gives an understanding of the nature and behaviors of light, electrons, atoms and nuclei, which are fundamental to a wide range of modern technologies. Tracing the historical development these subjects, it explains why relativity and quantum mechanics are needed, the key equations and concepts, and their applications in diverse fields from telecommunications to nuclear power.

IS015RG Analytical Physics 2B Lab 1 credit

Laboratory to complement Analytical Physics 2B

IS016IU Engineering Mechanics – Dynamics 3 credits

Kinematics of particles to rigid bodies, rotation of a rigid body, plane motion of a rigid body, relative motion, the principles of work and energy, impulse and momentum, impact.

IS017IU Work Design & Ergonomics 4 credits

Problem solving tools (recording and analysis tools, activity charts, line balancing). Operation analysis, manual work design (principles of motion economy, motion study). Time study (performance rating and allowances). Work sampling, predetermined time systems. Work environment design.

IS017SB Human Factors 3 credits

Introduction: Historical background, definition, importance. Human Machine Systems/ interfaces, Ergonomics at Work Place. Anthropometric Principles, Anthropometric Data – Sample, equipment, analysis. Applied Anthropometry and Work Space Design & Seating, Product design. Work related musculoskeletal disorders, visual environment, thermal environment, auditory environment, vibrations. Legal and Safety Aspects

Prerequisite*: Engineering Probability & Statistics*

Laboratory*: This lab gives students opportunities to perform hands-on experimentation in human factors*

IS018IU CAD/CAM 3 credits

This course introduces you to modern manufacturing with three areas of emphasis: computer aided design, computer aided manufacturing, and computer aided process planning.

This course provides the important theory, concepts, technology, and the state-of-the-art development in CAD/CAM. It is very important to understand how the CAD/CAM systems work and know the current industry status. The subjects covered in this class include part design specification, NC programming, process planning, and Computer aided process planning (CAPP), CAD and CAM systems, and CAD/CAM data exchange.

IS085IU CAD/CAM/CNC 3 credits

This course aims to help students to design parts or mechanical products by CAD/CAM software. The students are studied geometric transformations, geometric modeling, mathematical representations of curves, Wire frame modeling, surface and solid modeling. Numerical control systems and machine tools. Manual part programming, computerized part programming, CAD-CAM-CNC systems integration.

IS080IU Creative Thinking 3 credits

Students will learn techniques for improving the flexibility and originality of their thinking and will explore approaches used by managers and organizations to create and sustain high levels of innovation. Topics include: personal thinking preferences, everyday creativity and eliminating mental blocks, creative thinking techniques, idea selection approaches, teaming techniques for creativity, conditions that promote creativity, design for interaction, disruptive technologies, and intellectual property. The course uses fun and hands-on activities to stimulate innovation.

IS086IU Manufacturing Processes 3 credits

This course provides students with basic background about the manufacturing processes of products by using machining technologies such as casting, forging, welding, turning, milling, grinding, . . . These are the basic machining processes and common use; students can apply and develop in manufacturing areas for produce new products with advanced technologies.

IS084IU Environmental Science 2 credits

This course provides the basic knowledge of environmental science that includes general issues, ecology, and the impact of human activities to natural resources and environment and sustainable development & study all general issues; ecology: the basics of environmental science; population growth and utilization of natural resources and the environment; natural resources and current exploitation; pollution and its impacts, environmental economic and sustainable development & develop general awareness of the students about possible impacts of human activities on the environment and natural resources in order to justify relevant economic practices.

IS083IU Capstone design 3 credits

Capstone design is a semester-long course, this work will be done by group project including 2 – 3 students taken at the senior year. This project reflects practical industrial system engineering. Each project includes the use of open-ended problems, development and use of design methodology, formulation of design problem statements and specification; consideration of alternative solutions, feasibility consideration and detailed system descriptions. It also includes realistic constraints (such as economic factors, social impact, and environmental problem). The students choose the particular design project with approval of appropriate faculty, advisors. The capstone design topics should be related to the real case from industry, e.g. projects in the internship company of students in the previous semester. Also, this project emphasizing the use of knowledge in previous courses to design, evaluate a system such as facility designs, mathematical modeling and optimization, implement Lean tools, value stream mapping concepts, time-motion studies, etc.

IS086IU Introduction to Computing 3 credits

This course will cover some basic topics and applications of Matlab about variables, data types, statements, control structures, arrays, strings, functions and Graphical User Interfaces (GUIs). Students are learning consists solely of an extensive lesson, a broad overview of Matlab.

IS019IU Production Management 3 credits

Introduction to production systems. Production planning and control in decision making. Forecasting. Aggregate production planning. Capacity planning. Materials requirement planning. Scheduling. Advanced techniques and approaches in modern production planning and control for designing manufacturing and service systems.

IS020IU Engineering Economy 3 credits

Economic decisions involving engineering alternatives; annual cost, present worth, rate of return, and benefit-to-cost; before and after tax replacement economy; organizational financing; break-even charts; unit and minimum-cost public sector studies.

IS022IU Database Systems 3 credits

Introduce the fundamental concepts necessary for the design and use of modern database systems. Examine the concepts in the order that encountering them in the actual database design process. Discuss various forms for relations that possess good properties. Discuss how to use the relational database language SQL to define the relations and to write SQL statements to insert, delete, retrieve and update the data. Examine some of the fundamental storage structures that are used in relational database systems. Discuss some advanced topics in the database management area.

IS023IU Inventory Management 3 credits

Every organization holds stocks of materials to allow for variations and uncertainty in supply and demand. Stocks are replenished by deliveries from suppliers and reduced to meet demands from customers. Inventory management is responsible for all aspects of stock control. High stock buffer comes at a high price and organizations are continually looking for ways of reducing their inventory costs without affecting service.

This course provides students with an understanding of the principles, processes and methods for the effective management of inventory in relation to other activities in the supply chain. The course examines both the independent demand and dependent demand methods. Attention is given to the information needed to support these methods, including information from the inventory management information system, forecasts of demand and planned operations.

IS024IU Probabilistic Models in Operations Research 3 credits

To introduce the student into basic topics of mathematical modeling process of decision problems in complex stochastic industrial environments. This course covers stochastic operations research models, algorithms, and applications. Markov chains and queuing models are discussed. Renewal theory, reliability theory, and stochastic models for manufacturing systems are also taken into consideration. Students will acquire in this course the basis for the study of other probabilistic topics in their curriculum.

IS025IU Quality Management 3 credits

This course introduces to the principles of quality management, with an emphasis on cross-functional problem solving. It provides methods for quality planning, improvement and control with applications in manufacturing and service. The students also gain a basic understanding of the philosophy, conceptual frameworks and the tools of the Total Quality Management.

IS026IU Project Management 3 credits

Project management" course is developed to provide the principal concept on project management which was characterized by the project management body of knowledge guide (PMBOK Guide). The course emphasizes the five project process groups of initiating, planning, executing, controlling and closing, and the nine knowledge areas of project integration, scope, time, cost, quality, human resources, communication, risk, and procurement management.

In addition, this course also provides a computer aid for project management by introducing the application of Microsoft Project and project scheduling.

IS027IU Scheduling and Sequencing 3 credits

This course gives an introduction to scheduling problems: techniques, principles, algorithms and computerized scheduling systems. Topics include scheduling algorithms for single machine, parallel machine, flow shop, job shop and also solution methodologies such as heuristic procedures, constructive algorithms, branch and bound approaches, and genetic algorithms.

IS028IU Simulation Models In IE 4 credits

Systems modeling and simulation techniques find applications in fields as diverse as physics, chemistry, biology, economics, medicine, computer science, and engineering. The purpose of this course is to introduce fundamental principles and concepts in the general area of systems modeling and simulation. Topics to be covered in this course include basics of discrete-event system simulation, mathematical and statistical models.

IS029IU Logistics Engineering and Supply Chain Design 3 credits

Logistics and Supply chain management involves a number of decisions that benefit by quantitative techniques of analysis and design. The course will explore modeling, computation implementation of solutions in some areas of Logistics and Supply Chain Management. The content also includes material flow management across the supply chain, value management and analysis of total supply chain costs, robust design of supply chains, co-ordination of supply chain decisions and handling of uncertainties in supply chain management.

IS031IU Experimental Design 3 credits

An applied statistics course on planning, statistical analysis, and interpretation of experiments of various types. Coverage includes factorial designs, randomized blocks, Latin squares, incomplete block designs, nested, crossover designs, and optimal design.

IS032IU Facility Layout 3 credits

This course focuses on the fundamentals of the design, layout, and location of industrial and nonmanufacturing facilities. Selection of machines and material handling equipment and their efficient arrangement. Emphasis on quantitative methods. Warehouse layout. Facility location theory.

IS033IU Multi- Criteria Decision Making 3 credits

Decision making is one of the important parts in operation research or management science. Decision making techniques help management to choose the best alternative based on quantitative criteria. This course provides students with basic knowledge about decision model formulation, so that they can make decisions based on the results of the models. This course also provides students with specific techniques for practical applications in production and services.

IS034IU Product Design and Development 3 credits

Product Design and Development course introduces to the students the role of multiple functions in creating a new product (*e.g.* marketing, finance, industrial design, engineering, production) as well as tools and methods for product design and development. Highlight of the course is the project in which the students will design a new product and produce a prototype version of it. Throughout the project, the students will apply their learned principles and methods of product development in a realistic context. The course also enables the students to coordinate interdisciplinary tasks in order to achieve a common objective.

IS035IU Systems Engineering 3 credits

Systems Science is the course of methods to developing and analyzing the systems. This course provides the knowledge and skills necessary for the engineers in the development process and systems analysis (manufacturing and services): systems engineering processes, methods of evaluation, selection and integration of system components, system simulation, and assessment of reliability, availability, and serviceability of the systems.

IS040IU Management Information Systems 3 credits

Integrates topics of management and organization theory, information and communication theory, and systems theory relevant to managing an organization's information resources. Includes computer hardware and software, telecommunications, and database concepts and emphasizes the e-commerce and Internet based business models to get a competitiveness of global based business environments. This course meets the requirements for a Technology Intensive course.

IS041IU Lean Production 3 credits

This course will help students to understand the concepts and philosophies of lean, get familiar with lean tools/techniques, especially the concepts behind the tools/techniques used, and develop analytical, problem solving skills. Therefore, the students will be able to join well in most of foreign-invested enterprises or large organizations in Vietnam after graduation. Ultimately, they will be able to apply lean philosophy creatively in each unique practical situation.

IS043IU Flexible Manufacturing Systems 3 credits

This course studies the concept and method of flexible manufacturing system planning and control. The study covers flexible manufacturing system technology, flexible manufacturing system component, flexible manufacturing system performance evaluation: analytical model, simulation model, flexible manufacturing system configuration planning: routing optimization, capacity optimization, tools optimization, flexible manufacturing system production planning and control: batching, set-up planning. The course provides ability to plan and control flexible manufacturing system.

IS044IU Computer Controls of Manufacturing Systems 3 credits

Programmable automation applied to manufacturing. Controller architecture, sensors and automatic data acquisition, computer control of actuators, continuous and discrete control of processes, computer integration and local area networks.

IS045IU Leadership 3 credits

Organizational development and learning; leading learning organizations; leadership theories and perspectives, followership, leadership development; coaching and mentoring; leading groups and teams, leadership and diversity.

IS052IU Internship 1 2 credits

This course is an internship and is designed to supplement traditional classroom-based learning with experiential learning. The internship provides students with the opportunity to practically apply knowledge gained in their courses of Industrial & Systems Engineering.

Internships can be with a variety of host organizations, including foreign companies, government agencies and private industries. A minimum of 15 working days is required (5 days visit factory, 5 days write report, 5 days to get approval from supervisor). Whether the students have arranged their internship themselves or have been assisted in arranging one by the program assistant or other lecturers, they should let the program assistant know once there is a problem with the internship. The program coordinator can either intervene appropriately or see if the students can be transferred to a different company.

Students should be both supported and challenged and encouraged to take initiative and develop life-long learning skills. Each intern works under a site supervisor at the host organization and an advisor from IU (ISE's lecturer). The role of the site supervisor (or advisor) is to oversee the students and provide mentorship throughout the internship. The site supervisor and advisor will complete a performance evaluation form at the conclusion of the internship. Students will discuss their experiences through weekly reports and online discussions.

IS053IU Internship 2 3 credits

This course is an internship and is designed to supplement traditional classroom-based learning with experiential learning. The internship provides students with the opportunity to practically apply knowledge gained in their courses of Industrial & Systems Engineering.

Internships can be with a variety of host organizations, including foreign companies, government agencies and private industries. A minimum of 320 working hours or 40 working days is required. Whether the students have arranged their internship themselves or have been assisted in arranging one by the program assistant or other lecturers, they should let the program assistant know once there is a problem with the internship. The program coordinator can either intervene appropriately or see if the students can be transferred to a different company.

Students should be both supported and challenged and encouraged to take initiative and develop life-long learning skills. Each intern works under a site supervisor at the host organization and an advisor from IU (ISE's lecturer). The role of the site supervisor (or advisor) is to oversee the students and provide mentorship throughout the internship. The site supervisor and advisor will complete a performance evaluation form at the conclusion of the internship. Students will discuss their experiences through weekly reports and online discussions.

IS054IU Engineering Drawing 3 credits

This course provides students skills to present and interpret spatial models on planar models, present engineering drawings according to international standards (ISO). Methods of presenting models: orthogonal projection, isometric projection, oblique projection… Apply the projections to present objects in the drawings.

IS055IU Principles of Logistics and Supply Chain Management **3 credits**

This is an introductory course to Logistics and supply chain management (SCM). It provides an overview of fundamental concepts, business processes and models/tools. The objective of this course is to identify problems, issues and strategies in today's supply chain operations via real-world cases. Analytical models and technical tools are introduced as needed. This course combines SCM business knowledge with analytical thinking and pinpoints the role of SCM relative to other business disciplines. It serves as a roadmap to more in-depth courses on related topics.

IS056IU Introduction to Logistics and Supply Chain Management **3 credits**

This course focuses on familiarizing new Logistics & Supply Chain Management students to Logistics & Supply Chain Management in general and Logistics & Supply Chain Management at IU. The intention is to prepare students to become successful at IU and successful Logistics & Supply Chain Management Engineers.

IS057IU Warehouse Engineering Management 3 credits

This course provides the students with an understanding of the principles, processes and techniques for the effective planning, management and operation of warehouses. Through this exposure, students will gain insights into how warehousing adds value to the organization's supply chain and how warehousing decisions impact the performance of the organization.

IS058IU Time series & Forecasting Techniques 3 credits

The simplest definition of economic forecasting is that it is a process that has as its objective the prediction of future events or conditions to reduce that uncertainty so that our decisions will be better ones.

Specific objectives are to instruct you in:

1. The formulation and specification of forecasting models;
2. Data collection, interpretation, organization, and analysis for building forecasting models;
3. Fundamental statistical and probability concepts used in forecasting;
4. The existence of a hierarchy of forecasting models;
5. The use of econometric software in a lab setting.

IS059IU Materials Handling Systems 3 credits

Proper methods for material handling and storage including safety practices, proper equipment usage, engineering controls, and personal protective equipment. Included are procedures for storage of non-hazardous and hazardous materials, material handling equipment preventative maintenance, and motor fleet safety.

IS062IU E-Logistics in Supply Chain Management 3 credits

Comprehensive inquiry into the role of e-commerce in collaborative distribution and logistics relationships. Special attention is afforded to resource and technology interdependencies, exchange governance mechanisms and relationship management bench-marking. Emphasis is given to the tools for creating value in the supply chain.

IS063IU Sustainability in Supply Chain 3 credits

There is global experience and examples that show how comprehensive organizational environmental sustainability and archaeological criteria integrated into the supply chain management/procurement process and decision-making of public and private agencies, organizations and corporate entities can improve financial and environmental performance, while addressing ethics, social regeneration, resource/waste impacts and economic development concerns. This course will allow students to participate in applied research projects that include designing supply chain management and procurement systems and products, which address environmental, social and ethical considerations in organizational and corporate policy, program and reporting.

IS064IU Entrepreneurship in Supply Chain 3 credits

The nature and importance of entrepreneurship; forms of entrepreneurship; the entrepreneurial process; the entrepreneurial mind; creativity, ideas and innovation; screening entrepreneurial opportunities; identifying resources to support entrepreneurial activities; intellectual property issues; accessing finance and other resources; the entrepreneurial team; assessing risk; business structure and ethics; entrepreneurial strategy; finding and reaching customers and marketing innovation; feasibility planning.

IS065IU Supply Security and Risk Management 3 credits

Supply security and risk management have become major business concerns in view of the need to protect the supply chain and maintain business continuity in the wake of high-consequence disruptive events. This course provides a broad overview of key supply chain security areas and issues in the context of homeland security.

IS066IU Data Mining in Supply Chain 3 credits

Data mining refers to a family of techniques used to detect interesting nuggets of relationships/knowledge in data. With the availability of large databases to store, manage and assimilate data, the new thrust of data mining lies at the intersection of database systems, artificial intelligence and algorithms that efficiently analyze data. The distributed nature of several databases, their size and the high complexity of many techniques present interesting computational challenges.

An overview of business intelligence in the field of supply chain management and marketing. Addresses how to leverage business intelligence systems to define KPIs, sharpen the accuracy of forecasting and planning, track business activities, and deliver dashboards, scorecards, strategic reporting, and operational/real-time reporting to enhance decision making for supply chain and marketing. SAP business intelligence solution is introduced to illustrate the concepts.

IS067IU International Transportation & Logistics 3 credits

Students learn the significance of international traffic and transport logistics. Student will learn basic methods and applications of operations research to implement, operate and optimize overall company material flow technical networks. This applies in particular to the subject of the optimal arrangement of sources and outflows and their dimension as well as their optimal interconnection from a transport technology point of view.

Topics include: requirements for logistics companies; active in road freight, rail, air and sea transport; competition in international transport; competition in international transport; cost accounting for freight forwarding; price setting in road freight, rail, air and sea transport; information management in freight forwarding.

IS068IU Procurement Management 3 credits

This unit covers the following: the role of Purchasing and Procurement in Supply Chain Management, purchasing procedures, supplier sourcing and management, negotiations, supplier relationships, specifying product quality, matching supply with demand and support tools for purchasing and procurement. Comprehensive theories and models developed by practitioners are examined.

IS072IU Port Planning and Operations 3 credits

This course provides the students with an understanding of port system, geographical location of ports, related planning and operational issues. Methods and processes for port planning and design. Besides that, the students are provided the knowledge about Inland connectivity, port's linkage to transport infrastructure, intermodal connections, and marine operations in ports. Traffic management, cargo handling, terminal operations, facilities and equipment, port security.

IS073IU Business Law 3 credits

The aim of this course is to:

- Familiarize the student with legal language; basic concepts, principles and general knowledge of business Law.
- Introduce to students about main business forms in Vietnam and regulations for each. Also, possibility of reorganization and Insolvency for enterprises, as main subject matter of this course.
- Increase the student's understanding of the Vietnamese regulations over

business dispute resolution.

- Expose the student to legal reasoning and develop his/her ability to apply legal concepts.
- Introduce students to main trade international organizations and main international trade rules.
- Develop problem solving and legal analyzing skills and apply it to day-to-day practical situations.

IS074IU Import & Export Management 3 credits

The basic objective of this course is to provide to students with the necessary knowledge, skills and foundations for acquiring a wide range of rewarding careers into the rapidly expanding world of Import & Export Management. In addition, this course aims at imparting knowledge of trade procedures and documentation formalities with a view to enable the participants to develop a systematic approach in handling trade transaction and incidental paper work.

IS076IU Introduction to Computing – Matlab Application **3 credits**

Introduction to MATLAB, a powerful programming package for engineers and scientists. Students will learn the fundamentals of MATLAB, how to write programs in MATLAB, and how to solve engineering problems using MATLAB. Emphasis on problem-solving skills and mathematical tools of importance in engineering.

IS077IU Introduction to Programming – C++/C#, Python **2 credits**

Introduction to programming in C++. Operators and the C++ system; fundamental data types; flow of control; functions; arrays, pointers, and strings; application of C++ for solving engineering problems and numerical analyses.

IS079IU Scientific Writing **2 credits**

This course is offered for undergraduate students at School of IEM, IU. It aims to improve students' academic and scientific writing in English, and helps them successfully complete course reports, thesis, dissertations, and articles for publication as well as doing a proper presentation, etc. Upon completion of the course, we hope our students become more effective, more efficient, and more confident writers.

IS081IU Deterministic Models in Operations Research **4 credits**

Elements of problem solving and algorithmic design. Use of numerical analysis and linear algebra to solve industrial engineering problems. Topics to be covered include: problem formulations, simplex method in tableau form, duality theory, an introduction to the geometry of the simplex method, sensitivity analysis,

transportation and network flow problems, optimality conditions and basic numerical methods for nonlinear programs.

IS082IU Retail Management 3 credits

This course provides the student with a comprehensive view of retailing and an application of marketing concepts in a practical retail managerial environment. As a potential marketing manager, this course will give students insight into the retailing environment of which students will be a part and allow students to make informed decisions in your interaction with retailers. The course also provides a good foundation for those interested in owning or running a small retail business or those interested in pursuing a retail career as a merchandise buyer or store manager.

BA003IU Principles of Marketing 3 credits

The course of Principles of Marketing provides the students with necessary information on the basic concepts of Marketing. It focuses on the understanding of Market Demand and Customers Behaviors as well as Marketing strategies developed by firms in terms of Pricing, Product, Place, Promotion, etc. The course also mentions various methods to market research and environmental factors that affects the marketing activities.

BA028IU Organizational Behavior 3 credits

The nature of organizational behavior, individual behavior in organizations; personality; perception; motivation concepts; decision-making; cultural differences; leadership; managing and understanding groups and teams; influence and power; managing organizations through change; stress management and organizational culture.

BA032IU Sales Management 3 credits

Problems, policies, and functions of sales management as the vital link between selling and marketing. Role of the sales manager in the development of a successful salesforce. Topics include territory and market analyses, compensation, sales planning, and control.

BA156IU Human Resource Management 3 credits

This course studies the effects of sociological, legal, economic, ethical, political, strategic and environmental changes, issues and developments on human resource management processes, practices, programs and policies.

BA184IU Financial Accounting 4 credits

This course develops a basic understanding on the theories, principles, and applications of accounting and financial reporting, essentials in the US standard, including topics such as the theory of debit and credit, accounts, special journals, the accounting cycle, notes and interest, accruals and deferrals, cash, receivables, inventory, fixed assets, and the preparation of financial statements. In general, its primary aim is to provide the basic knowledge in preparing and processing accounting transactions in order to present financial details in a relevant and effective manner, as well as interpreting this accounting information for different types of external and internal investors, management and other accounting information users.

11. DISCIPLINARY PROCEDURES & RIGHTS

For more details, please visit our website as follows:
https://iem.hcmiu.edu.vn/

Chapter I. General regulations:
Article 1. Scope of adjustment and target of application
Article 2. Objectives
Article 3. University Diploma
Article 4. Objectives and standards outcomes of the curriculum
Article 5. Major
Article 6. Accumulation time and minimum total number of credits
Article 7. Teaching Plan
Article 8. Credits
Article 9. Classes
Article 10. Criteria for assessing learning outcomes
Article 11. Student's handbook

Chapter II. Educational programs and methods
Article 12. Subjects
Article 13. Educational programs
Article 14. Educational programs associated with a specific major
Article 15. Educational programs associated with more than one specific major
Article 16. Educational methods
Article 17. Parallel studying (two majors)

Chapter III Educational organization
Article 18. Types of students
Article 19. Responsibilities of the schools, academic advisors and students
Article 20. Entry registration, assign the students into educational programs.
Article 21. Tuition fee
Article 22: Register for the number of credits
Article 23. Additional registration, adjustment and cancellation of the courses registration.
Article 24. Sign up to retake the course
Article 25. Organize the class for subjects
Article 26. Grade scale, exam grades, component grades
Article 27. Not finished (Grade I)
Article 28. Exemption grade (Grade WH)
Article 29. Organize subjects assessment
Article 30. Issue the exam questions, exam methods and exams grading
Article 31. Conditions for taking the midterm and final examinations at the end of the course

11.1 A6. NECESSARY SAMPLE FORMS:

The below link provides the form samples you might need during your studies at IU: http://iem.hcmiu.edu.vn/category/forms/ .