



**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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**DISCIPLINARY PROCEDURES & RIGHTS**

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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

- a. An ability to apply knowledge of mathematics, science and engineering
- b. An ability to design and conduct experiments, as well as to analyze and interpret data
- c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- d. An ability to function in multidisciplinary teams
- e. An ability to identify, formulate, model and simulate and solve industrial and systems problems
- f. An understanding of professional and ethical responsibility
- g. An ability to communicate effectively
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- i. A recognition of the need for, and an ability to engage in life-long learning
- j. A knowledge of contemporary issues and ability to self-update
- k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

## 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:

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

- English level 2:  $430 \leq \text{TOEFL} < 500$  ( $40 \leq \text{TOEFL IBT} < 60$ ): Students are admitted to take partial program together with English preparation classes (IE2).
- English level 3:  $\text{TOEFL} < 430$  ( $\text{TOEFL IBT} < 40$ ): 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)*

## 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: 10% - 20%
- Final exam: 40% - 60%
- Others (e.g. In-class quizzes, group presentation, etc): 20% - 40%

## 2.10 Grading system

Classification	100-Point Grading	4-Point Grading	Alphabet Grading
<b>Passing</b>			
Excellent	$85 \leq \text{GPA} \leq 100$	4.0	A
Very Good	$75 \leq \text{GPA} < 85$	3.75	A-
Good	$65 \leq \text{GPA} < 75$	3.5	B+
Fair	$60 \leq \text{GPA} < 65$	3.0	B
Fair-Good	$55 \leq \text{GPA} < 60$	2.5	C+
Average	$50 \leq \text{GPA} < 55$	2.0	C
<b>No Passing</b>			
Weak	$30 \leq \text{GPA} \leq 50$	1.3	D+
Very weak	$10 \leq \text{GPA} \leq 30$	1.0	D
Bad	$\text{GPA} \leq 10$	0	F





# IU ISE PROGRAM

### 3. IU ISE PROGRAM (for batch 2016)

#### 3.1 English Level 1: TOEFL $\geq$ 500

**TOTAL CREDITS: 144 (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
CH011IU	Chemistry for Engineers	3	IS054IU	Engineering Drawing	3
			PH015IU	Physics 3	3
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>		<b>21</b>

Summer Semester		Crds
PE011IU	Principles of Marxism	5
PE012IU	HCM' s thoughts	2
PE013IU	Revolutionary Lines of Vietnamese Communist Party	3
<b>Total Credits</b>		<b>10</b>



Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA027IU	Applied Linear Algebra	2	IS077IU	Introduction to Programming – C++/C#, Python	2
IS019IU	Production Management	3	IS020IU	Engineering Economy	3
IS076IU	Introduction to Computing - Matlab Application	3	IS081IU	Deterministic models in OR	4
IS004IU	Engineering Probability & Statistics	4	IS017IU	Work design & Ergonomics + Lab	4
MA023IU	Calculus 3	4	IS034IU	Product Design & Development	3
IS016IU	Engineering Mechanics – Dynamics	3	MA029IU	Differential Equations for ISE	2
<b>Total Credits</b>		<b>19</b>	<b>Total Credits</b>		<b>18</b>
<b>Summer Semester</b>		Crds			
IS052IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			

Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
IS040IU	Management Information System	3	IS079IU	Scientific Writing	2
IS025IU	Quality Management	3	IS028IU	Simulation Models in IE	4
IS026IU	Project Management	3	IS027IU	Scheduling & Sequencing	3
IS024IU	Probabilistic Models in OR	3	IS078IU	Logistics Engineering & Supply Chain Design	3
IS__IU	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>	IS__IU	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>
IS031IU	Experimental Design	3	IS044IU	Computer Control Manufacturing Systems	3
IS018IU	CAD/CAM	3	IS068IU	Procurement Management	3
IS058IU	Time series & forecasting technique	3			
<b>Total Credits</b>		<b>15</b>	<b>Total Credits</b>		<b>15</b>

<b>Summer Semester</b>		<b>Crds</b>	
IS053IU	Internship 2	3	
<b>Total Credits</b>		<b>3</b>	

Senior Year (Year 4)					
Semester 7		Crds	Semester 8		Crds
IS083IU	Capstone Project	1	IS048IU	Thesis research	10
IS033IU	Multi-Criteria Decision Making	3			
IS041IU	Lean Production	3			
IS032IU	Facility Layout	3			
IS__IU	<b>ISE Elective Course (choose 3 course below)</b>	<b>9</b>			
IS080IU	Creative Thinking	3			
IS035IU	Systems Engineering	3			
IS043IU	Flexible Manufacturing Systems	3			
IS045IU	Leadership	3			
IS023IU	Inventory Management	3			
IS082IU	Retail Management	3			
IS067IU	International Transportation & Logistics	3			

IS062IU	E-Logistics in Supply Chain Management	3		
<b>Total Credits</b>		<b>19</b>	<b>Total Credits</b>	<b>10</b>

**3.2 English Level 2:  $430 \leq \text{TOEFL} < 500$**

**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
			MA003IU	Calculus 2	4
			IS001IU	Introduction to Industrial Engineering	1
			IS054IU	Engineering Drawing	3
<b>Total Credits</b>		<b>25</b>	<b>Total Credits</b>		<b>20</b>

<b>Summer Semester</b>		<b>Crds</b>
<b>PE011IU</b>	Principles of Marxism	5
<b>PE012IU</b>	HCM' s thoughts	2
<b>PE013IU</b>	Revolutionary Lines of Vietnamese Communist Party	3
<b>Total Credits</b>		<b>10</b>

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA027IU	Applied Linear Algebra	2	IS077IU	Introduction to Programming – C++/C#, Python	2
IS019IU	Production Management	3	IS020IU	Engineering Economy	3
IS076IU	Introduction to Computing – Matlab Application	3	IS081IU	Deterministic models in OR	4
IS004IU	Engineering Probability & Statistics	4	IS017IU	Work design & Ergonomics + Lab	4
IS016IU	Engineering Mechanics – Dynamics	3	IS034IU	Product Design & Development	3
EN011IU	Writing AE2	2	MA029IU	Differential Equations for ISE	2
EN012IU	Speaking AE2	2	MA023IU	Calculus 3	4
PE008IU	Critical Thinking	3			
<b>Total Credits</b>		<b>22</b>	<b>Total Credits</b>		<b>22</b>
<b>Summer Semester</b>		<b>Crds</b>			
IS052IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			



Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
PH015IU	Physics 3	3	IS079IU	Scientific Writing	2
IS040IU	Management Information System	3	IS028IU	Simulation Models in IE	4
IS025IU	Quality Management	3	IS027IU	Scheduling & Sequencing	3
IS026IU	Project Management	3	IS078IU	Logistics Engineering & Supply Chain Design	3
IS024IU	Probabilistic Models in OR	3	<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>
<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>	IS068IU	Procurement Management	3
IS031IU	Experimental Design	3	IS044IU	Computer Control Manufacturing Systems	3
IS018IU	CAD/CAM	3			
IS058IU	Time series & forecasting technique	3			
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>		<b>15</b>

<b>Summer Semester</b>		<b>Crds</b>
IS053IU	Internship 2	3
<b>Total Credits</b>		<b>3</b>

Senior Year (Year 4)								
Semester 7		Crds	Semester 8		Crds			
IS033IU	Multi-Criteria Decision Making	3	IS048IU	Thesis research	10			
IS041IU	Lean Production	3						
IS032IU	Facility Layout	3						
IS__IU	<b>ISE Elective Course (choose 3 courses below)</b>	<b>9</b>						
IS080IU	Creative Thinking	3						
IS035IU	Systems Engineering	3						
IS043IU	Flexible Manufacturing Systems	3						
IS045IU	Leadership	3						
IS023IU	Inventory Management	3						
IS082IU	Retail Management	3						
IS067IU	International Transportation & Logistics	3						
IS062IU	E-Logistics in Supply Chain Management	3						
<b>Total Credits</b>		<b>18</b>				<b>Total Credits</b>		<b>10</b>

**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
<b>Total Credits</b>		<b>25</b>	<b>Total Credits</b>		<b>24</b>
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
PE012IU	HCM' s thoughts	2			
PE013IU	Revolutionary Lines of Vietnamese Communist Party	3			
<b>Total Credits</b>		<b>10</b>			

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	MA023IU	Calculus 3	4
MA027IU	Applied Linear Algebra	2			
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>		<b>21</b>
<b>Summer Semester</b>		<b>Crds</b>			
IS052IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			

Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
PH015IU	Physics 3	3	IS077IU	Introduction to Programming – C++/C#, Python	2
IS019IU	Production Management	3	IS020IU	Engineering Economy	3
IS076IU	Introduction to Computing - Matlab Application	3	IS017IU	Work design & Ergonomics + Lab	4
IS040IU	Management Information System	3	IS034IU	Product Design & Development	3
IS025IU	Quality Management	3	MA029IU	Differential Equations for ISE	2
IS016IU	Engineering Mechanics – Dynamics	3	<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>
<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>	IS044IU	Computer Control Manufacturing Systems	3
IS031IU	Experimental Design	3	IS068IU	Procurement Management	3
IS018IU	CAD/CAM	3			

IS058IU	Time series & forecasting technique	3	
PH015IU	Physics 3	3	
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>   <b>17</b>

Senior Year (Year 4)					
Semester 7		Crds	Semester 8		Crds
IS033IU	Multi-Criteria Decision Making	3	IS028IU	Simulation Models in IE	4
IS026IU	Project Management	3	IS027IU	Scheduling & Sequencing	3
IS024IU	Probabilistic Models in OR	3	IS032IU	Facility Layout	3
IS041IU	Lean Production	3	IS078IU	Logistics Engineering & Supply Chain Design	3
<b>IS__IU</b>	<b>ISE Elective Course (choose 3 courses below)</b>	<b>9</b>	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	
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b> <b>15</b>
<b>Summer Semester</b>		Crds	
IS053IU	Internship 2	3	
<b>Total Credits</b>		<b>3</b>	
<b>Senior Year (Year 5)</b>			
<b>Semester 9</b>		Crds	
IS048IU	Thesis research	10	
<b>Total Credits</b>		<b>10</b>	

**4. IU ISE PROGRAM (for batch 2017 and 2018)**

**4.1 English Level 1: TOEFL  $\geq$  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
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>		<b>21</b>
<b>Summer Semester</b>		<b>Crds</b>			
PE011IU	Principles of Marxism	5			
<b>Total Credits</b>		<b>5</b>			

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA027IU	Applied Linear Algebra	2	IS020IU	Engineering Economy	3
IS019IU	Production Management	3	IS081IU	Deterministic models in OR	4
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
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>		<b>21</b>
<b>Summer Semester</b>		Crds			
IS052IU	Internship 1	2			
	Military Training	0			

<b>Total Credits</b>		<b>2</b>			
<b>Junior Year (Year 3)</b>					
<b>Semester 5</b>		<b>Crds</b>	<b>Semester 6</b>		<b>Crds</b>
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
<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>			
IS031IU	Experimental Design	3			
IS018IU	CAD/CAM	3			
IS058IU	Time series & forecasting techniques	3			
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>		<b>15</b>

<b>Summer Semester</b>		<b>Crds</b>			
IS053IU	Internship 2	3			
<b>Total Credits</b>		<b>3</b>			
<b>Senior Year (Year 4)</b>					
<b>Semester 7</b>		<b>Crds</b>	<b>Semester 8</b>		<b>Crds</b>
IS083IU	Capstone Design	3	IS048IU	Thesis research	10
IS033IU	Multi-Criteria Decision Making	3			
IS032IU	Facility Layout	3			
IS__IU	<b>ISE Elective Course (choose 3 courses below)</b>	<b>9</b>			
IS080IU	Creative Thinking	3			
IS035IU	Systems Engineering	3			
IS043IU	Flexible Manufacturing Systems	3			
IS045IU	Leadership	3			
IS023IU	Inventory Management	3			
IS082IU	Retail Management	3			

IS067IU	International Transportation & Logistics	3	
IS062IU	E-Logistics in Supply Chain Management	3	
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>
			<b>10</b>

**4.2 English Level 2:  $430 \leq \text{TOEFL} < 500$**

**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
<b>Total Credits</b>		<b>23</b>	<b>Total Credits</b>		<b>22</b>
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
<b>Total Credits</b>		<b>5</b>			

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA027IU	Applied Linear Algebra	2	IS020IU	Engineering Economy	3
IS019IU	Production Management	3	IS081IU	Deterministic models in OR	4
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
<b>Total Credits</b>		<b>23</b>	<b>Total Credits</b>		<b>21</b>
<b>Summer Semester</b>		Crds			
IS052IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			



Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
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	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>	IS041IU	Lean Production	3
IS031IU	Experimental Design	3			
IS018IU	CAD/CAM	3			
IS058IU	Time series & forecasting technique	3			
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>		<b>20</b>

<b>Summer Semester</b>		<b>Crds</b>	
IS053IU	Internship 2	3	
<b>Total Credits</b>		<b>3</b>	

Senior Year (Year 4)								
Semester 7		Crds	Semester 8		Crds			
IS083IU	Capstone Design	3	IS048IU	Thesis research	10			
IS033IU	Multi-Criteria Decision Making	3						
IS032IU	Facility Layout	3						
IS__IU	<b>ISE Elective Course (choose 3 courses below)</b>	<b>9</b>						
IS080IU	Creative Thinking	3						
IS035IU	Systems Engineering	3						
IS043IU	Flexible Manufacturing Systems	3						
IS045IU	Leadership	3						
IS023IU	Inventory Management	3						
BA146IU	Retail Management	3						
IS067IU	International Transportation & Logistics	3						
IS062IU	E-Logistics in Supply Chain Management	3						
<b>Total Credits</b>		<b>18</b>				<b>Total Credits</b>		<b>10</b>

**4.3 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
<b>Total Credits</b>		<b>25</b>	<b>Total Credits</b>		<b>24</b>
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
<b>Total Credits</b>		<b>5</b>			

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			
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>		<b>20</b>
<b>Summer Semester</b>		<b>Crds</b>			
IS052IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			

Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
PH015IU	Physics 3	3	IS076IU	Introduction to Computing- Matlab	3
IS084IU	Environmental Science	3	IS020IU	Engineering Economy	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 Communist Party	3
IS025IU	Quality Management	3	MA029IU	Differential Equation	2
<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>			
IS031IU	Experimental Design	3			

IS018IU	CAD/CAM	3		
IS058IU	Time series & forecasting technique	3		
<b>Total Credits</b>		<b>23</b>	<b>Total Credits</b>	<b>18</b>
<b>Summer Semester</b>		Crds		
IS053IU	Internship 2	3		
<b>Total Credits</b>		<b>3</b>		

Senior Year (Year 4)						
Semester 7			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	<b>ISE Elective Course (choose 3 courses below)</b>	<b>9</b>	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	
<b>Total Credits</b>		<b>21</b>	<b>Total Credits 15</b>
<b>Senior Year (Year 5)</b>			
<b>Semester 9</b>		<b>Crds</b>	
IS048IU	Thesis research	10	
<b>Total Credits</b>		<b>10</b>	

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

**5.1 English Level 1: TOEFL  $\geq$  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	PE008IU	Critical Thinking	3
PH014IU	Physics 2	2	PT002IU	Physical Training 2	3
PT001IU	Physical Training 1	3	IS001IU	Introduction to Industrial Engineering	1
CH012IU	Chemistry Laboratory	1	IS054IU	Engineering Drawing	3
CH011IU	Chemistry for Engineers	3	PH015IU	Physics 3	3
<b>Total Credits</b>		<b>19</b>	<b>Total Credits</b>		<b>21</b>
<b>Summer Semester</b>		Crds			
PE011IU	Principles of Marxism	5			
<b>Total Credits</b>		<b>5</b>			

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA027IU	Applied Linear Algebra	2	IS020IU	Engineering Economy	3
IS019IU	Production Management	3	IS081IU	Deterministic models in OR	4
IS086IU	Introduction to Computing	3	IS017IU	Work design & Ergonomics + Lab	4
IS004IU	Engineering Probability & Statistics	4	IS085IU	CAD/CAM/CNC	3
MA023IU	Calculus 3	4	IS034IU	Product Design & Development	3
PE012IU	HCM' s thoughts	2	PE013IU	Revolutionary Lines of Vietnamese Communist Party	3
IS016IU	Engineering Mechanics – Dynamics	3			
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>		<b>20</b>
<b>Summer Semester</b>		Crds			
IS052IU	Internship 1	2			
	Military Training	0			

<b>Total Credits</b>		<b>2</b>			
<b>Junior Year (Year 3)</b>					
<b>Semester 5</b>		<b>Crds</b>	<b>Semester 6</b>		<b>Crds</b>
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
<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>			
IS031IU	Experimental Design	3			
IS087IU	Manufacturing Processes	3			

IS058IU	Time series & forecasting techniques	3	
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>   <b>15</b>
<b>Summer Semester</b>		Crds	
IS053IU	Internship 2	3	
<b>Total Credits</b>		<b>3</b>	

Senior Year (Year 4)					
Semester 7		Crds	Semester 8		Crds
IS083IU	Capstone Design	3	IS048IU	Thesis research	10
IS033IU	Multi-Criteria Decision Making	3			
IS032IU	Facility Layout	3			
<b>IS__IU</b>	<b>ISE Elective Course (choose 3 courses below)</b>	<b>9</b>			
IS080IU	Creative Thinking	3			
IS035IU	Systems Engineering	3			
IS043IU	Flexible Manufacturing Systems	3			
IS045IU	Leadership	3			
IS023IU	Inventory Management	3			
IS082IU	Retail Management	3			

IS067IU	International Transportation & Logistics	3		
IS062IU	E-Logistics in Supply Chain Management	3		
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>	<b>10</b>

**5.2 English Level 2:  $430 \leq \text{TOEFL} < 500$**

**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	CH012IU	Chemistry Laboratory	1		
MA001IU	Calculus 1	4	CH011IU	Chemistry for Engineers	3		
			PH013IU	Physics 1	2		
			PH014IU	Physics 2	2		
			PT002IU	Physical Training 2	3		

		MA003IU	Calculus 2	4	
		IS001IU	Introduction to Industrial Engineering	1	
		IS054IU	Engineering Drawing	3	
<b>Total Credits</b>		<b>23</b>	<b>Total Credits</b>	<b>23</b>	
<b>Summer Semester</b>		Crds			
PE011IU	Principles of Marxism	5			
<b>Total Credits</b>		<b>5</b>			
<b>Sophomore Year (Year 2)</b>					
<b>Semester 3</b>		Crds	<b>Semester 4</b>	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
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			
<b>Total Credits</b>		<b>23</b>	<b>Total Credits</b>		<b>20</b>

<b>Summer Semester</b>		<b>Crds</b>
IS052IU	Internship 1	2
	Military Training	0
<b>Total Credits</b>		<b>2</b>

Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
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

<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>	IS041IU	Lean Production	3
IS031IU	Experimental Design	3			
IS087IU	Manufacturing Processes	3			
IS058IU	Time series & forecasting technique	3			
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>		<b>20</b>
<b>Summer Semester</b>		<b>Crds</b>			
IS053IU	Internship 2	3			
<b>Total Credits</b>		<b>3</b>			

Senior Year (Year 4)						
Semester 7			Crds	Semester 8		Crds
IS083IU	Capstone Design	3	IS048IU	Thesis research	10	
IS033IU	Multi-Criteria Decision Making	3				
IS032IU	Facility Layout	3				
IS__IU	<b>ISE Elective Course (choose 3 courses below)</b>	<b>9</b>				
IS080IU	Creative Thinking	3				
IS035IU	Systems Engineering	3				
IS043IU	Flexible Manufacturing Systems	3				
IS045IU	Leadership	3				
IS023IU	Inventory Management	3				

BA146IU	Retail Management	3		
IS067IU	International Transportation & Logistics	3		
IS062IU	E-Logistics in Supply Chain Management	3		
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>	<b>10</b>

### 5.3 English Level 3: TOEFL < 430

**TOTAL CREDITS: 184 (Note: Credits of Physical Training 1 and Physical Training 2 are not included in cumulative credits)**

Freshman Year (Year 1)						
Semester 1			Crds	Semester 2		Crds
EN072IU	Reading & Writing IE1	11	EN074IU	Reading & writing IE2	8	
EN073IU	Listening & Speaking IE1	11	EN075IU	Listening & speaking IE2	8	
PT001IU	Physical Training 1	3	PT002IU	Physical Training 2	3	
			IS001IU	Introduction to Industrial Engineering	1	
			MA001IU	Calculus 1	4	
<b>Total Credits</b>			<b>25</b>	<b>Total Credits</b>		<b>24</b>
<b>Summer Semester</b>			Crds			

PE011IU	Principles of Marxism	5	
<b>Total Credits</b>		<b>5</b>	

Sophomore Year (Year 2)						
Semester 3			Crds	Semester 4		Crds
MA027IU	Applied Linear Algebra	2	CH012IU	Chemistry Laboratory	1	
EN007IU	Writing AE1	2	CH011IU	Chemistry for Engineers	3	
EN008IU	Listening AE1	2	IS081IU	Deterministic models in OR	4	
IS004IU	Engineering Probability & Statistics	4	EN012IU	Speaking AE2	2	
PE008IU	Critical Thinking	3	EN011IU	Writing AE2	2	
PH013IU	Physics 1	2	IS054IU	Engineering Drawing	3	
PH014IU	Physics 2	2	MA023IU	Calculus 3	4	
MA003IU	Calculus 2	4				
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>		<b>19</b>	

Summer Semester		Crds
IS052IU	Internship 1	2
	Military Training	0
<b>Total Credits</b>		<b>2</b>

Junior Year (Year 3)						
Semester 5			Crds	Semester 6		Crds
PH015IU	Physics 3	3	IS086IU	Introduction to Computing	3	
IS084IU	Environmental Science	3	IS020IU	Engineering Economy	3	
IS019IU	Production Management	3	IS017IU	Work design & Ergonomics + Lab	4	
IS040IU	Management Information System	3	IS034IU	Product Design & Development	3	
IS025IU	Quality Management	3	IS041IU	Lean Production	3	
IS016IU	Engineering Mechanics – Dynamics	3	PE013IU	Revolutionary Lines of Vietnamese Communist Party	3	

PE012IU	HCM' s thoughts	2	IS085IU	CAD/CAM/ CNC	3
<b>IS__IU</b>	<b>ISE Elective Course (choose 1 course below)</b>	<b>3</b>			
IS031IU	Experimental Design	3			
IS087IU	Manufacturing Processes	3			
IS058IU	Time series & forecasting technique	3			
<b>Total Credits</b>		<b>23</b>	<b>Total Credits</b>		<b>22</b>
<b>Summer Semester</b>		Crds			
IS053IU	Internship 2	3			
<b>Total Credits</b>		<b>3</b>			



Senior Year (Year 4)					
Semester 7		Crds	Semester 8		Crds
IS083IU	Capstone Design	3	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	<b>ISE Elective Course (choose 3 courses below)</b>	<b>9</b>	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		
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>	<b>15</b>
<b>Senior Year (Year 5)</b>				
<b>Semester 9</b>		<b>Crds</b>		
IS048IU	Thesis research	10		
<b>Total Credits</b>		<b>10</b>		



# LOGISTICS & SCM PROGRAM

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

**6.1 English Level 1: TOEFL  $\geq$  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 Chain Management	1
CH011IU	Chemistry for Engineers	3	IS054IU	Engineering Drawing	3
			PH015IU	Physics 3	3
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>		<b>21</b>

Summer Semester		Crds
PE011IU	Principles of Marxism	5
PE012IU	HCM' s thoughts	2
PE013IU	Revolutionary Lines of Vietnamese Communist Party	3
<b>Total Credits</b>		<b>10</b>

<b>Sophomore Year (Year 2)</b>					
<b>Semester 3</b>		<b>Crds</b>	<b>Semester 4</b>		<b>Crds</b>
IS019IU	Production Management	3	IS077IU	Introduction to Programming – C++/C#, Python	2
IS076IU	Introduction to Computing – MatLab Application	3	IS020IU	Engineering Economy	3
MA027IU	Applied Linear Algebra	2	IS081IU	Deterministic models in OR	4
IS004IU	Engineering Probability & Statistics	4	IS057IU	Warehouse Engineering Management	3
IS055IU	Principles of Logistics and Supply Chain Management	3	BA003IU	Principles of Marketing	3
IS073IU	Business Law	3			
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>		<b>18</b>

<b>Summer Semester</b>		<b>Crds</b>			
IS069IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			
<b>Junior Year (Year 3)</b>					
<b>Semester 5</b>		<b>Crds</b>	<b>Semester 6</b>		<b>Crds</b>
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 Management	3

<b>IS__IU</b>	<b>LSCM Elective Course (choose 1 course below)</b>	<b>3</b>		
IS058IU	Time series & forecasting techniques	3		
IS024IU	Probabilistic Models in OR	3		
IS035IU	Systems Engineering	3		
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>	<b>15</b>
<b>Summer Semester</b>		<b>Crds</b>		
IS070IU	Internship 2	3		
<b>Total Credits</b>		<b>3</b>		



Senior Year (Year 4)						
Semester 7			Crds	Semester 8		Crds
IS033IU	Multi-Criteria Decision Making	3	IS048IU	Thesis research	10	
IS067IU	International Transportation & Logistics	3				
IS026IU	Project Management	3				
IS__IU	<b>LSCM Elective Course (choose 2 courses below)</b>	<b>6</b>				
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		
<b>Total Credits</b>		<b>15</b>	<b>Total Credits</b>	<b>10</b>

**6.2 English Level 1:  $430 \leq \text{TOEFL} < 500$**

**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
<b>Total Credits</b>		<b>25</b>	<b>Total Credits</b>		<b>20</b>

<b>Summer Semester</b>		<b>Crds</b>
PE011IU	Principles of Marxism	5
PE012IU	HCM' s thoughts	2
PE013IU	Revolutionary Lines of Vietnamese Communist Party	3
<b>Total Credits</b>		<b>10</b>

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			
<b>Total Credits</b>		<b>22</b>	<b>Total Credits</b>		<b>18</b>

<b>Summer Semester</b>		<b>Crds</b>	
IS069IU	Internship 1	2	
	Military Training	0	
<b>Total Credits</b>		<b>2</b>	

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
<b>IS__IU</b>	<b>LSCM Elective Course (choose 1 course below)</b>	<b>3</b>			
IS058IU	Time series & forecasting techniques	3			
IS024IU	Probabilistic Models in OR	3			

IS035IU	Systems Engineering	3	
<b>Total Credits</b>		<b>22</b>	<b>Total Credits</b> <b>18</b>
<b>Summer Semester</b>		Crds	
IS070IU	Internship 2	3	
<b>Total Credits</b>		<b>3</b>	



Senior Year (Year 4)					
Semester 7		Crds	Semester 8		Crds
IS033IU	Multi-Criteria Decision Making	3	IS048IU	Thesis research	10
IS067IU	International Transportation & Logistics	3			
IS026IU	Project Management	3			
IS__IU	<b>LSCM Elective Course (choose 2 courses below)</b>	<b>6</b>			
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		
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>	<b>10</b>

**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
<b>Total Credits</b>		<b>25</b>	<b>Total Credits</b>		<b>24</b>
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
PE012IU	HCM' s thoughts	2			
PE013IU	Revolutionary Lines of Vietnamese Communist Party	3			
<b>Total Credits</b>		<b>10</b>			

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
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>		<b>20</b>
<b>Summer Semester</b>		<b>Crds</b>			
IS052IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			

Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
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	<b>LSCM Elective Course (choose 1 course below)</b>	<b>3</b>			
IS058IU	Time series & forecasting techniques	3			

IS024IU	Probabilistic Models in OR	3		
IS035IU	Systems Engineering			
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>	<b>18</b>

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
<b>IS__IU</b>	<b>LSCM Elective Course (choose 2 courses below)</b>	<b>6</b>			
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		
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>	<b>15</b>
<b>Summer semester</b>		Crds		
IS047IU	Internship 2	3		
<b>Total Credits</b>		<b>3</b>		
<b>Senior Year (Year 5)</b>				
<b>Semester 9</b>		Crds		
IS048IU	Thesis research	10		
<b>Total Credits</b>		<b>10</b>		



**7. LOGISTICS & SCM PROGRAM (for batch 2019 and forwards)**

**7.1 English Level 1: TOEFL  $\geq$  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	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			
<b>Total Credits</b>		<b>19</b>	<b>Total Credits</b>		<b>18</b>

<b>Summer Semester</b>		<b>Crds</b>	
PE011IU	Principles of Marxism	5	
<b>Total Credits</b>		<b>5</b>	

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
PE012IU	HCM' s thoughts	2	PE013IU	Revolutionary Lines of Vietnamese Communist Party	3
IS073IU	Business Law	3			
<b>Total Credits</b>		<b>20</b>	<b>Total Credits</b>		<b>20</b>

<b>Summer Semester</b>		<b>Crds</b>	
IS069IU	Internship 1	2	
	Military Training	0	
<b>Total Credits</b>		<b>2</b>	

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	BA184IU	Financial Accounting	4
IS__IU	<b>LSCM Elective Course (choose 1 course below)</b>	<b>3</b>	IS068IU	Procurement Management	3
IS058IU	Time series & forecasting techniques	3			
IS054IU	Engineering Drawing	3			

IS024IU	Probabilistic Models in OR	3		
IS035IU	Systems Engineering	3		
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>	<b>19</b>
<b>Summer Semester</b>		Crds		
IS070IU	Internship 2	3		
<b>Total Credits</b>		<b>3</b>		

Senior Year (Year 4)					
Semester 7		Crds	Semester 8		Crds
IS033IU	Multi-Criteria Decision Making	3	IS048IU	Thesis research	10
IS083IU	Capstone Design	3			
IS067IU	International Transportation & Logistics	3			
IS026IU	Project Management	3			
IS__IU	<b>LSCM Elective Course (choose 2 courses below)</b>	<b>6</b>			
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		
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>	<b>10</b>



**7.2 English Level 1:  $430 \leq \text{TOEFL} < 500$**

**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	CH012IU	Chemistry Laboratory	1
MA001IU	Calculus 1	4	CH011IU	Chemistry for Engineers	3
			PH014IU	Physics 2	2
			PT002IU	Physical Training 2	3
			IS056IU	Introduction to Logistics & Supply Chain Management	1
			PH013IU	Physics 1	2
			MA003IU	Calculus 2	4
<b>Total Credits</b>		<b>23</b>	<b>Total Credits</b>		<b>20</b>
<b>Summer Semester</b>		<b>Crds</b>			
PE011IU	Principles of Marxism	5			
<b>Total Credits</b>		<b>5</b>			

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
EN011IU	Writing AE2	2	IS020IU	Engineering Economy	3
EN012IU	Speaking AE2	2	IS081IU	Deterministic models in OR	4
IS019IU	Production Management	3	IS057IU	Warehouse Engineering Management	3
IS004IU	Engineering Probability & Statistics	4	PH015IU	Physics 3	3
PE008IU	Critical Thinking	3	MA023IU	Calculus 3	4
IS055IU	Principles Logistics and Supply Chain Management	3	IS073IU	Business Law	3
IS086IU	Introduction to Computing	3			
MA027IU	Applied Linear Algebra	2			
<b>Total Credits</b>		<b>22</b>	<b>Total Credits</b>		<b>20</b>
<b>Summer Semester</b>		Crds			
IS069IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			

Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
PE014IU	Environmental Science	3	IS068IU	Procurement Management	3
BA184IU	Financial Accounting	4	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
PE012IU	HCM’ s thoughts	2	PE013IU	Revolutionary Lines of Vietnamese Communist Party	3
<b>IS__IU</b>	<b>LSCM Elective Course (choose 1 course below)</b>	<b>3</b>			
IS058IU	Time series & forecasting techniques	3			
IS054IU	Engineering Drawing	3			

IS024IU	Probabilistic Models in OR	3		
IS035IU	Systems Engineering	3		
<b>Total Credits</b>		<b>24</b>	<b>Total Credits</b>	<b>21</b>
<b>Summer Semester</b>		Crds		
IS070IU	Internship 2	3		
<b>Total Credits</b>		<b>3</b>		

Senior Year (Year 4)					
Semester 7		Crds	Semester 8		Crds
IS083IU	Capstone Design	3	IS048IU	Thesis research	10
IS033IU	Multi-Criteria Decision Making	3			
IS067IU	International Transportation & Logistics	3			
IS026IU	Project Management	3			
IS__IU	<b>LSCM Elective Course (choose 2 courses below)</b>	<b>6</b>			
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		
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>	<b>10</b>

**7.3 English Level 3: TOEFL < 430**

**TOTAL CREDITS: 184 (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
<b>Total Credits</b>		<b>25</b>	<b>Total Credits</b>		<b>24</b>
Summer Semester		Crds			
PE011IU	Principles of Marxism	5			
<b>Total Credits</b>		<b>5</b>			

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA027IU	Applied Linear Algebra	2	MA023IU	Calculus 3	4
EN007IU	Writing AE1	2	CH012IU	Chemistry Laboratory	1
EN008IU	Listening AE1	2	CH011IU	Chemistry for Engineers	3
IS004IU	Engineering Probability & Statistics	4	IS081IU	Deterministic models in OR	4
PH013IU	Physics 1	2	EN011IU	Writing AE2	2
PH014IU	Physics 2	2	EN012IU	Speaking AE2	2
MA003IU	Calculus 2	4	PE008IU	Critical Thinking	3
			PH015IU	Physics 3	3
<b>Total Credits</b>		<b>18</b>	<b>Total Credits</b>		<b>22</b>
<b>Summer Semester</b>		<b>Crds</b>			
IS052IU	Internship 1	2			
	Military Training	0			
<b>Total Credits</b>		<b>2</b>			



Junior Year (Year 3)					
Semester 5		Crds	Semester 6		Crds
IS019IU	Production Management	3	IS082IU	Retail Management	3
IS086IU	Introduction to Computing	3	IS020IU	Engineering Economy	3
IS055IU	Principles Logistics and Supply Chain Management	3	IS057IU	Warehouse Engineering Management	3
IS073IU	Business Law	3	BA184IU	Financial Accounting	4
IS040IU	Management Information Systems	3	PE013IU	Revolutionary Lines of Vietnamese Communist Party	3
IS023IU	Inventory Management	3	IS074IU	Import – Export Management	3
PE012IU	HCM’ s thoughts	2			
IS__IU	<b>LSCM Elective Course (choose 1 course below)</b>	<b>3</b>			
IS058IU	Time series & forecasting techniques	3			
IS024IU	Probabilistic Models in OR	3			

IS054IU	Engineering Drawing	3		
IS035IU	Systems Engineering	3		
<b>Total Credits</b>		<b>23</b>	<b>Total Credits</b>	<b>19</b>
<b>Summer semester</b>		<b>Crds</b>		
IS047IU	Internship 2	3		
<b>Total Credits</b>		<b>3</b>		

Senior Year (Year 4)					
Semester 7		Crds	Semester 8		Crds
PE014IU	Environmental Science	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
<b>IS__IU</b>	<b>LSCM Elective Course (choose 2 courses below)</b>	<b>6</b>	IS079IU	Scientific Writing	2
IS025IU	Quality Management	3			
BA032IU	Sales 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		
IS045IU	Leadership	3		
IS080IU	Creative Thinking	3		
BA003IU	Principles Of Marketing	3		
BA156IU	Human Resources Management	3		
<b>Total Credits</b>		<b>21</b>	<b>Total Credits</b>	<b>18</b>
<b>Senior Year (Year 5)</b>				
<b>Semester 9</b>		Crds		
IS048IU	Thesis research	10		
<b>Total Credits</b>		<b>10</b>		



# TWINNING PROGRAM

**(Curricula for the first two years in IU)**

**8. IU-RG (Rutgers University) PROGRAM (For batch 2014 and forwards)**

**8.1 English Level 1: TOEFL  $\geq$  500**

**TOTAL CREDITS: 74**

Freshman Year (Year 1)					
Semester 1		Crds	Semester 2		Crds
EN007RG	Writing AE1	2	EN011RG	Writing AE2	2
EN008RG	Listening AE1	2	EN012RG	Speaking AE2	2
MA001RG	Calculus 1	4	MA003RG	Calculus 2	4
PH013RG	Physics 1	2	PE008RG	Critical Thinking	3
PH014RG	Physics 2	2	CH008RG	Analytical chemistry	3
CH011RG	Chemistry for Engineers	3	IS001RG	Introduction to Industrial Engineering	1
CH012RG	Chemistry Laboratory	1	IS002RG	Introduction to Computing	3
			IS005RG	Engineering Mechanics - Statics	3
<b>Total Credits</b>		<b>16</b>	<b>Total Credits</b>		<b>21</b>

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA023RG	Calculus 3	4	MA024RG	Differential Equations	4
PH015RG	Physics 3	3	IS014RG	Analytical Physics IIB	3
PH016RG	Physics 3 Lab	1	IS015RG	Analytical Physics IIB Lab	1
IS006RG	IE Lab	2	IS016RG	Engineering Mechanics - Dynamics	3
IS004RG	Engineering Probability	3	IS017RG	Work design & Ergonomics + Lab	4
IS013RG	Mechanics of Solids	3	IS003RG	Introduction to Microeconomic	3
			IS012RG	Introduction to Macroeconomics	3
<b>Total Credits</b>		<b>16</b>	<b>Total Credits</b>		<b>21</b>

**8.2 English Level 1:  $430 \leq \text{TOEFL} < 500$**

**TOTAL CREDITS: 90**

Freshman Year (Year 1)						
Semester 1			Crds	Semester 2		Crds
EN075RG	Listening & Speaking IE2	8	CH011RG	Chemistry for Engineers	3	
EN074RG	Reading & Writing IE2	8	CH012RG	Chemistry Laboratory	1	
MA001RG	Calculus 1	4	MA003RG	Calculus 2	4	
PH013RG	Physics 1	2	IS005RG	Engineering Mechanics – Statics	3	
PH014RG	Physics 2	2	PE008RG	Critical thinking	3	
			EN007RG	Writing AE1	2	
			EN008RG	Listening AE1	2	
			IS001RG	Introduction to Industrial Engineering	1	
<b>Total Credits</b>		<b>24</b>	<b>Total Credits</b>		<b>19</b>	
Summer Semester			Crds			
EN011RG	Writing AE2	2				
EN012RG	Listening AE2	2				
<b>Total Credits</b>		<b>4</b>				



Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
MA023RG	Calculus 3	4	MA024RG	Differential Equations	4
PH015RG	Physics 3	3	IS014RG	Analytical Physics IIB	3
PH016RG	Physics 3 Lab	1	IS015RG	Analytical Physics IIB Lab	1
IS006RG	IE lab	2	IS016RG	Engineering Mechanics – Dynamics	3
IS004RG	Engineering Probability	3	IS003RG	Introduction to Microeconomic	3
IS013RG	Mechanics of Solids	3	IS012RG	Introduction to Macro economics	3
CH008RG	Analytical chemistry	3	IS017RG	Work design & Ergonomics + Lab	4
			IS002RG	Introduction to Computing	3
<b>Total Credits</b>		<b>19</b>	<b>Total Credits</b>		<b>24</b>

**8.3 English Level 1: TOEFL < 430**

**TOTAL CREDITS: 112**

Freshman Year (Year 1)					
Semester 1		Crds	Semester 2		Crds
EN072RG	Reading & writing IE1	11	EN075RG	Listening & Speaking IE2	8
EN073RG	Listening & speaking IE1	11	EN074RG	Reading & Writing IE2	8
			PH013RG	Physics 1	2
			PH014RG	Physics 2	2
			MA001RG	Calculus 1	4
			IS001RG	Introduction to IE	1
<b>Total Credits</b>		<b>22</b>	<b>Total Credits</b>		<b>25</b>
Summer Semester		Crds			
EN007RG	Writing AE1	2			
EN008RG	Listening AE1	2			
MA003RG	Calculus 2	4			
<b>Total Credits</b>		<b>8</b>			

Sophomore Year (Year 2)					
Semester 3		Crds	Semester 4		Crds
CH011RG	Chemistry for Engineers	3	CH008RG	Analytical chemistry	4
CH012RG	Chemistry Laboratory	1	IS005RG	Engineering Mechanics – Statics	3
IS006RG	IE lab	2	IS002RG	Introduction to Computing	3
IS004RG	Engineering Probability	3	IS017RG	Work design & Ergonomics + Lab	4
MA023RG	Calculus 3 (Multi-variable Calculus)	4	IS013RG	Mechanics of Solids	3
EN011RG	Writing AE2	2	IS003RG	Introduction to Microeconomic	3
EN012RG	Speaking AE2	2	IS012RG	Introduction to Macro economics	3
<b>Total Credits</b>		<b>17</b>	<b>Total Credits</b>		<b>23</b>

Junior Year (Year 3)		
Semester 5		Crds
MA024RG	Differential Equations	4
PH015RG	Physics 3	3
PH016RG	Physics 3 Lab	1
IS016RG	Engineering Mechanics – Dynamics	3
IS014RG	Analytical Physics IIB	3
IS015RG	Analytical Physics IIB Lab	1
PE008RG	Critical thinking	3
<b>Total Credits</b>		<b>18</b>

**9. IU-SB PROGRAM (The State University of New York, University at Binghamton) (For batch 2017 and forwards)**

**9.1 English Level 1: TOEFL  $\geq$  500**

**TOTAL CREDITS: 54**

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	0
CH012SB	Chemistry Laboratory	1	IS001SB	Introduction to Industrial Engineering	1
PT001SB	Physical Training 1	0			
<b>Total Credits</b>		<b>14</b>	<b>Total Credits</b>		<b>11</b>

Sophomore Year (Year 2)

<b>Semester 3</b>		<b>Crds</b>	<b>Semester 4</b>		<b>Crds</b>
MA024SB or MA023SB	Differential Equations or Cal 3	4	IS017SB	Human Factors	4
PH015SB	Physics 3	3	IS077SB	Introduction to Programming – C++/C#, Python	2
PH016SB	Physics 3 Lab	1	IS005SB	Engineering Mechanics - Statics	3
PE008SB	Critical Thinking	3	IS020SB	Engineering Economy	3
IS004SB	Engineering Probability	4	PH012SB	Physics 4	2
<b>Total Credits</b>		<b>15</b>	<b>Total Credits</b>		<b>14</b>

**9.2 English Level 1:  $430 \leq \text{TOEFL} < 500$**

**TOTAL CREDITS: 70**

Freshman Year (Year 1)					
Semester 1		Crds	Semester 2		Crds
EN075SB	Listening & Speaking IE2	8	EN007SB	Writing AE1	2
EN074SB	Reading & Writing IE2	8	EN008SB	Listening AE1	2
PT001SB	Physical Training 1	0	MA001SB	Calculus 1	4
			PH013SB	Physics 1	2
			PT002SB	Physical Training 2	0
			IS001SB	Introduction to Industrial Engineering	1
<b>Total Credits</b>		<b>16</b>	<b>Total Credits</b>		<b>11</b>

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	IS005SB	Engineering Mechanics – Statics	3
PH014SB	Physics 2	2	IS077SB	Introduction to Programming – C++/C#, Python	2
IS004SB	Engineering Probability	4	IS017SB	Human Factors	4
			IS020SB	Engineering Economy	3
<b>Total Credits</b>		<b>14</b>	<b>Total Credits</b>		<b>16</b>



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			
<b>Total Credits</b>		<b>13</b>			

**9.3 English Level 1: TOEFL < 430**

**TOTAL CREDITS: 92**

Freshman Year (Year 1)					
Semester 1		Crds	Semester 2		Crds
EN073SB	Listening & Speaking IE1	11	EN075SB	Listening & Speaking IE2	8
EN072SB	Reading & Writing IE1	11	EN074SB	Reading & Writing IE2	8
PT001SB	Physical Training 1	0	PT002SB	Physical training 2	0
			IS001SB	Introduction to IE	1
<b>Total Credits</b>		<b>22</b>	<b>Total Credits</b>		<b>17</b>
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	IS005SB	Engineering Mechanics – Statics	3
			IS017SB	Human Factors	4
<b>Total Credits</b>		<b>14</b>	<b>Total Credits</b>		<b>17</b>

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	IS077SB	Introduction to Programming – C++/C#, Python	2
PH016SB	Physics 3 Lab	1	IS020SB	Engineering Economy	3
			PH012SB	Physics 4	2
<b>Total Credits</b>		<b>11</b>	<b>Total Credits</b>		<b>11</b>

*\*\*Subject to change. The RG ISE and 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.

**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*

**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 scarce 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.

**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

**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.

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      3 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



**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.

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.

**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.

**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.

**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.

**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      3 credits**  
**Application**

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 –      2 credits**  
**C++/C#, Python**

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.

# DISCIPLINARY PROCEDURES & RIGHTS

For more detail please take a look at the above announcement:

[https://edusoftweb.hcmiu.edu.vn/Upload/Quy\\_che\\_hoc\\_che\\_tin\\_chi\\_VN.pdf](https://edusoftweb.hcmiu.edu.vn/Upload/Quy_che_hoc_che_tin_chi_VN.pdf)

(Issued according to the decision No. 276/ QĐ-ĐHQT/ĐT date 10/9/2008 by The Principal of the International University HCM city)

## **STUDENT RULES**

### **A1. PROGRAM TRANSFER RULES**

- 1. Changing majors with the degree awarded by the school:**
- 2. Change the major from the sandwich program with degree awarded by a foreign school to a program awarded by The International University:**

### **A2. REGULATIONS FOR CREDIT TEACHING – BACHELOR LEVEL**

- 1. Academic program**
- 2. Credits**
- 3. Courses, academic year and semesters**
  - 3.1 Courses**
  - 3.2 Academic year and semester**
- 4. Classes**
- 5. Subjects- Equivalent subjects - Subject's grade**
  - 5.2 Subjects**



**5.2 Subject's grade**

**6. Semester GPA, cumulative GPA**

**6.1 Semester GPA,**

**6.2 Cumulative GPA**

**6.3 Cumulative credit**

**A3. STUDENT TYPES**

**1. Regular students**

**2. Stopped students**

**3. Students**

**A4. SUBJECT REGISTRATION**

**1. Registration process:**

**2. Subject registration:**

**2.1 Calendar adjustment:**

**2.2 Additional registration or subject cancellation process:**

**2.2.1 Regulations regarding adding or cancelling subjects:**

**2.2.2 Parallel studying for 2 programs:**

**2.2.3 Switching majors and programs conditions:**

**2.2.4 Changing school conditions:**

**A5. EVALUATE AND HANDLE ACADEMIC RESULT**

**Taking test regularly and take the final exam at the end of the course**

**1. Conditions to take the regular and final exam.**

**2. Methods of grade calculation, GPA and academic ranking result**

**3 Result announcement**

**4 Remark the exam**

**5 Disciplinary action against students**

**Handle the academic result:**

**1. Retake the course/subject**

**2. Improving grades**

**3. Academic warnings**

**4. Suspension of study and removal of name from the student list**

**5. Conditions to continue to study**

**6. Priority consideration for continue studying, dropping out**

**Conditions to receive thesis, graduation project, take the final exam:**

**Condition to consider and certified the graduation status:**

**Graduation rankings:**

**Withdrawal of diplomas or certificates:**

## **A6. NECESSARY SAMPLE FORMS**

The below link provides necessary sample forms during the time you study at IU:

<http://ise.hcmiu.edu.vn/category/forms/> .