



**DEPARTMENT OF INDUSTRIAL  
AND SYSTEMS ENGINEERING**

---

**STUDENT HANDBOOK**

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

## Table of Contents

|            |   |           |
|------------|---|-----------|
| <b>1.</b>  | <b>INTRODUCTION</b> .....   | <b>3</b>  |
| <b>2.</b>  | <b>DEPARTMENT OF ISE</b> .....  | <b>4</b>  |
| <b>2.1</b> | <b>Mission</b> .....  | <b>4</b>  |
| <b>2.2</b> | <b>Objectives</b> .....   | <b>4</b>  |
| <b>2.3</b> | <b>Career Opportunities</b> .....   | <b>4</b>  |
| <b>2.4</b> | <b>Specific Aim</b> .....   | <b>5</b>  |
| <b>2.5</b> | <b>Expected Learning Outcome</b> .....  | <b>6</b>  |
| <b>2.6</b> | <b>Course Design</b> .....  | <b>7</b>  |
| <b>2.7</b> | <b>Scholarship</b> .....  | <b>8</b>  |
| <b>2.8</b> | <b>Course Assessment</b> .....  | <b>8</b>  |
| <b>2.9</b> | <b>Classification According to GPA</b> .....  | <b>9</b>  |
|            | <b>IU ISE PROGRAM</b> .....   | <b>10</b> |
| <b>3.</b>  | <b>IU ISE PROGRAM (for batch 2011, 2012, 2013)</b> .....                                | <b>11</b> |
| <b>3.1</b> | <b>English Level 1: TOEFL <math>\geq</math> 500</b> .....                               | <b>11</b> |
| <b>3.2</b> | <b>English Level 2: <math>430 \leq</math> TOEFL <math>&lt;</math> 500</b> .....         | <b>14</b> |
| <b>3.3</b> | <b>English Level 3: TOEFL <math>&lt;</math> 430</b> .....                               | <b>17</b> |
| <b>4.</b>  | <b>IU ISE PROGRAM (for batch 2014 and forwards)</b> .....                               | <b>20</b> |
| <b>4.1</b> | <b>English Level 1: TOEFL <math>\geq</math> 500</b> .....                               | <b>20</b> |
| <b>4.2</b> | <b>English Level 2: <math>430 \leq</math> TOEFL <math>&lt;</math> 500</b> .....         | <b>23</b> |
| <b>4.3</b> | <b>English Level 3: TOEFL <math>&lt;</math> 430</b> .....                               | <b>25</b> |
|            | <b>TWINNING PROGRAM</b> .....   | <b>29</b> |
| <b>5.</b>  | <b>IU-RG (Rutgers University) PROGRAM</b> .....   | <b>30</b> |
| <b>5.1</b> | <b>English Level 1: TOEFL <math>\geq</math> 500</b> .....                               | <b>30</b> |
| <b>5.2</b> | <b>English Level 1: <math>430 \leq</math> TOEFL <math>&lt;</math> 500</b> .....         | <b>31</b> |
| <b>5.3</b> | <b>English Level 1: TOEFL <math>&lt;</math> 430</b> .....                               | <b>33</b> |
| <b>6.</b>  | <b>IU-SB PROGRAM (The State University of New York, University at Binghamton)</b> ..... | <b>35</b> |
| <b>6.1</b> | <b>English Level 1: TOEFL <math>\geq</math> 500</b> .....                               | <b>35</b> |
| <b>6.2</b> | <b>English Level 1: <math>430 \leq</math> TOEFL <math>&lt;</math> 500</b> .....         | <b>36</b> |

|  |  |           |
|--|--|-----------|
| 6.3  | English Level 1: TOEFL < 430 .....                                     | 37        |
| <b>LOGISTICS &amp; SCM PROGRAM .....</b>                   |  | <b>39</b> |
| 7.   | <b>LOGISTICS &amp; SCM PROGRAM (for batch 2014 and forwards) .....</b> | <b>40</b> |
| 7.1  | English Level 1: TOEFL $\geq$ 500 .....                                | 40        |
| 7.2  | English Level 1: $430 \leq$ TOEFL < 500 .....                          | 44        |
| 7.3  | English Level 3: TOEFL < 430 .....                                     | 47        |
| 8.   | <b>COURSE DESCRIPTION .....</b>  | <b>50</b> |
| <b>DISCIPLINARY PROCEDURES &amp; RIGHTS</b>                |  |           |
| <b>STUDENT REGULATIONS</b>                                 |  |           |
| <b>A1. PROGRAM TRANSFER REGULATIONS</b>                    |  |           |
| <b>A2. REGULATIONS FOR EARNING CREDIT – BACHELOR LEVEL</b> |  |           |
| <b>A3. TYPE OF STUDENTS</b>                                |  |           |
| <b>A4. SUBJECT REGISTRATION</b>                            |  |           |
| <b>A5. EVALUATE AND HANDLE THE ACADEMIC RESULTS</b>        |  |           |

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

## **2. DEPARTMENT OF ISE**

### **2.1 Mission**

The Department of Industrial and Systems Engineering in International University – Vietnam National University, Ho Chi Minh city (IU – VNUHCM) aims to attract, educate students and prepare them to be leaders in the Industrial and Systems Engineering (ISE) in Vietnam and Asia. The department offers programs to satisfy the needs of Vietnam in industry development, research, education and entrepreneurship in the field.

### **2.2 Objectives**

The undergraduate program of Industrial & Systems Engineering (ISE) will provide students with knowledge and skills in theory as well as practice on designing, operating, improving and optimizing the production and service systems.

### **2.3 Career Opportunities**

ISE engineers can take on and perform excellently tasks in various fields, namely Logistics & Supply Chain Management, Project Management, Inventory Management, Quality 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.

## 2.4 Specific Aim

ISE graduates should be capable of:

1. Operating effectively within the ISE domain.
2. Solving (complex) engineering design problems in industrial system of production and services.
3. Collecting, analyzing and evaluating data relevant to problems arising in the ISE domain with special emphasis on using statistics, quantitative methods, design of experiments, quality management and simulation, and then modeling and making decision to improve system.
4. Applying current technology to solve industrial problems. Moreover, ISE graduates are excel at:
  - **System Designing:** designing industrial system of production and services from small to medium scales.
  - **System Operating:** Operating effectively industrial system of production and services by reasonable use of resources.
  - **System Improving:** Analyzing, modeling and determining optimal variables and problems thus suggesting necessary changes.
  - **System Restructuring:** Analyzing, evaluating the current industrial system of production and services and suggesting a restructure for a productivity and efficiency improvement.
  - **Decision Making Supporting:** supporting the managers by making from simple to multi-criteria optimization under conditions of certainty and uncertainty.

## **2.5 Expected Learning Outcome**

1. Apply mathematics science and engineering principles [ABET 3A].
2. Ability to design and conduct experiments and interpret data [ABET 3B].
3. Ability to design a system, component, or process to meet desired needs [ABET 3C].
4. Ability function on multidisciplinary teams [ABET 3D].
5. Ability to identify, formulate, and solve engineering problems [ABET 3E].
6. Ability to understand professional and ethical responsibility [ABET 3F].
7. Ability to communicate effectively [ABET 3G].
8. Ability to understand the impact of engineering solutions in a global context [ABET 3H].
9. Ability to recognize the need for and to engage in life-long learning [ABET 3I].
10. Ability to Know of contemporary issues [ABET 3J].
11. Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice [ABET 3K].
12. Ability to exert the effort necessary for job success [ABET 3L].
13. Ability to consider the entire system in project solutions [ABET 3M].

## 2.6 Course Design

The course of the B.S Degree in Industrial & System Engineering in the IU – VNUHCM 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, the State University of New Jersey, or at University at 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 ISE program is 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: TOEFL  $< 430$  (TOEFL IBT  $< 40$ ): Students are required to take only intensive English course (IE1) for the first semester of the first year at school.
- *(See more on the curricula of different ISE programs)*



## 2.7 Scholarship

Students with entrance examination scores equal or above 24.5 are eligible to receive full scholarship which is worth 126.200.000 VND (~ \$6,000 USD) for the whole course (4 years for domestic programs and 2 years for twinning programs). Partial scholarship, which is worth 63.100.000 VND (~ \$ 3,000 USD for the whole course), is offered to students with entrance examination scores from 23.5 to 24.5. 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.

## 2.8 Course Assessment

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

## 2.9 Classification According to GPA

| <b>Classification</b> | <b>100-Point Grading</b>      |
|-----------------------|-------------------------------|
| <b>Passing</b>        |                               |
| Excellent             | $90 \leq \text{GPA} \leq 100$ |
| Very Good             | $80 \leq \text{GPA} < 90$     |
| Good                  | $70 \leq \text{GPA} < 80$     |
| Fair                  | $60 \leq \text{GPA} < 70$     |
| Average               | $50 \leq \text{GPA} < 60$     |
| <b>No Passing</b>     |                               |
| Weak                  | $40 \leq \text{GPA} \leq 50$  |
| Very weak             | $\text{GPA} < 40$             |



# IU ISE PROGRAM

### 3. IU ISE PROGRAM (for batch 2011, 2012, 2013)

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

**TOTAL CREDITS: 143**

| Freshman Year (Year 1)  |   |   |           |                                 |   |  |           |
|-------------------------|---|---|-----------|---------------------------------|---|--|-----------|
| Semester 1              |   |   | Crds      | Semester 2                      |   |  | Crds      |
| MA001IU                 | Calculus 1  | 4 | MA003IU   | Calculus 2                      | 4 |  |           |
| PH013IU                 | Physics 1   | 2 | PH014IU   | Physics 2                       | 2 |  |           |
| CH011IU                 | Chemistry for Engineers                           | 3 | IS002IU   | Introduction to Computing       | 3 |  |           |
| CH012IU                 | Chemistry Laboratory                              | 1 | EN011IU   | Writing AE2                     | 2 |  |           |
| PE008IU                 | Critical Thinking                                 | 3 | EN012IU   | Speaking AE2                    | 2 |  |           |
| EN007IU                 | Writing AE1                                       | 2 | IS005IU   | Engineering Mechanics – Statics | 3 |  |           |
| EN008IU                 | Listening AE1                                     | 2 | PT002IU   | Physical Training 2             | 0 |  |           |
| PT001IU                 | Physical Training 1                               | 0 |           |                                 |   |  |           |
| <b>Total Credits</b>    |   |   | <b>17</b> | <b>Total Credits</b>            |   |  | <b>16</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      |
| MA023IU                 | Calculus 3  | 4 | MA024IU   | Differential Equations          | 4 |  |           |
| PH015IU                 | Physics 3   | 3 | IS014IU   | Analytical Physics 2B           | 3 |  |           |
| PH016IU                 | Physics 3 Lab                                     | 1 | IS015IU   | Analytical Physics 2B Lab       | 1 |  |           |
| IS001IU                 | Introduction to Industrial Engineering            | 1 | IS020IU   | Engineering Economy             | 3 |  |           |

|                             |  |           |                      |   |           |
|-----------------------------|--|-----------|----------------------|---|-----------|
| IS006IU                     | IE lab   | 2         | IS017IU              | Work design & Ergonomics + Lab                      | 4         |
| IS004IU                     | Engineering Probability & Statistics               | 4         | IS034IU              | Product Design & Development                        | 3         |
| IS016IU                     | Engineering Mechanics – Dynamics                   | 3         |                      |   |           |
| <b>Total Credits</b>        |  | <b>18</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>  |                      |   |           |
| <b>Junior Year (Year 3)</b> |  |           |                      |   |           |
| <b>Semester 5</b>           |  | Crds      | <b>Semester 6</b>    |   | Crds      |
| IS019IU                     | Production Management                              | 3         | IS024IU              | Probabilistic Models in OR                          | 3         |
| IS021IU                     | Deterministic models in OR                         | 3         | IS026IU              | Project Management                                  | 3         |
| IS022IU                     | Database Systems                                   | 3         | IS028IU              | Simulation Models in IE                             | 4         |
| IS025IU                     | Quality Management                                 | 3         | <b>IS__IU</b>        | <b>ISE Elective Course (choose 2 courses below)</b> | <b>6</b>  |
| IS051IU                     | Communication skills                               | 3         | IS032IU              | Facility Layout                                     |           |
| <b>IS__IU</b>               | <b>ISE Elective Course (choose 1 course below)</b> | <b>3</b>  | IS040IU              | Management Information System                       |           |
| IS031IU                     | Experimental Design                                |           | IS023IU              | Inventory Management                                |           |
| IS018IU                     | CAD/CAM  |           | IS044IU              | Computer Control Manufacturing Systems              |           |
| <b>Total Credits</b>        |  | <b>18</b> | <b>Total Credits</b> |   | <b>16</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      |
| IS027IU              | Scheduling & Sequencing                             | 3         | IS048IU              | Thesis research | 10        |
| IS029IU              | Supply chain & Logistics Management                 | 3         |                      |                 |           |
| <b>IS__IU</b>        | <b>ISE Elective Course (choose 2 courses below)</b> | <b>6</b>  |                      |                 |           |
| IS033IU              | Multi-Criteria Decision Making                      |           |                      |                 |           |
| IS045IU              | Leadership  |           |                      |                 |           |
| IS041IU              | Lean Production                                     |           |                      |                 |           |
| IS043IU              | Flexible Manufacturing Systems                      |           |                      |                 |           |
| IS035IU              | Systems Engineering                                 |           |                      |                 |           |
|                      | <b>Free Elective Course</b>                         | <b>3</b>  |                      |                 |           |
| <b>Total Credits</b> |   | <b>15</b> | <b>Total Credits</b> |                 | <b>10</b> |

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

**TOTAL CREDITS: 154**

| Freshman Year (Year 1)  |   |     |           |                                 |   |  |           |
|-------------------------|---|-----|-----------|---------------------------------|---|--|-----------|
| Semester 1              |   |     | Crds      | Semester 2                      |   |  | Crds      |
| EN070IU                 | Reading & Writing IE4                             | 5.6 | EN007IU   | Writing AE1                     | 2 |  |           |
| EN071IU                 | Listening & Speaking IE4                          | 5.4 | EN008IU   | Listening AE1                   | 2 |  |           |
| MA001IU                 | Calculus 1  | 4   | IS005IU   | Engineering Mechanics – Statics | 3 |  |           |
| PH013IU                 | Physics 1   | 2   | CH012IU   | Chemistry Laboratory            | 1 |  |           |
| CH011IU                 | Chemistry for Engineers                           | 3   | PE008IU   | Critical Thinking               | 3 |  |           |
| PT001IU                 | Physical Training 1                               | 0   | MA003IU   | Calculus 2                      | 4 |  |           |
|                         |   |     | PH014IU   | Physics 2                       | 2 |  |           |
|                         |   |     | PT002IU   | Physical Training 2             | 0 |  |           |
| <b>Total Credits</b>    |   |     | <b>20</b> | <b>Total Credits</b>            |   |  | <b>17</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      |
| MA023IU                 | Calculus 3  | 4   | MA024IU   | Differential Equations          | 4 |  |           |
| PH015IU                 | Physics 3   | 3   | IS014IU   | Analytical Physics 2B           | 3 |  |           |
| PH016IU                 | Physics 3 Lab                                     | 1   | IS015IU   | Analytical Physics 2B Lab       | 1 |  |           |
| IS001IU                 | Introduction to Industrial Engineering            | 1   | IS002IU   | Introduction to Computing       | 3 |  |           |
| IS006IU                 | IE lab  | 2   | IS020IU   | Engineering Economy             | 3 |  |           |

|                             |  |             |                      |  |             |
|-----------------------------|--|-------------|----------------------|--|-------------|
| IS004IU                     | Engineering Probability & Statistics               | 4           | IS017IU              | Work design & Ergonomics                           | 4           |
| EN011IU                     | Writing AE2  | 2           | IS034IU              | Product Design & Development                       | 3           |
| EN012IU                     | Speaking AE2                                       | 2           |                      |  |             |
| <b>Total Credits</b>        |  | <b>19</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>    |                      |  |             |
| <b>Junior Year (Year 3)</b> |  |             |                      |  |             |
| <b>Semester 5</b>           |  | <b>Crds</b> | <b>Semester 6</b>    |  | <b>Crds</b> |
| IS016IU                     | Engineering Mechanics – Dynamics                   | 3           | IS024IU              | Probabilistic Models in OR                         | 3           |
| IS019IU                     | Production Management                              | 3           | IS026IU              | Project Management                                 | 3           |
| IS021IU                     | Deterministic models in OR                         | 3           | IS028IU              | Simulation Models in IE                            | 4           |
| IS022IU                     | Database Systems                                   | 3           | IS051IU              | Communication skills                               | 3           |
| IS025IU                     | Quality Management                                 | 3           | <b>IS__IU</b>        | <b>ISE Elective Course (choose 2 course below)</b> | <b>6</b>    |
| <b>IS__IU</b>               | <b>ISE Elective Course (choose 1 course below)</b> | <b>3</b>    | IS032IU              | Facility Layout                                    |             |
| IS031IU                     | Experimental Design                                |             | IS040IU              | Management Information System                      |             |
| IS018IU                     | CAD/CAM  |             | IS023IU              | Inventory Management                               |             |
|                             |  |             | IS044IU              | Computer Control Manufacturing Systems             |             |
| <b>Total Credits</b>        |  | <b>18</b>   | <b>Total Credits</b> |  | <b>19</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      |
| IS027IU              | Scheduling & Sequencing                             | 3         | IS048IU              | Thesis research | 10        |
| IS029IU              | Supply chain & Logistics Management                 | 3         |                      |                 |           |
| <b>IS__IU</b>        | <b>ISE Elective Course (choose 2 courses below)</b> | <b>6</b>  |                      |                 |           |
| IS033IU              | Multi-Criteria Decision Making                      |           |                      |                 |           |
| IS045IU              | Leadership  |           |                      |                 |           |
| IS041IU              | Lean Production                                     |           |                      |                 |           |
| IS043IU              | Flexible Manufacturing Systems                      |           |                      |                 |           |
| IS035IU              | Systems Engineering                                 |           |                      |                 |           |
|                      | <b>Free Elective Course</b>                         | <b>3</b>  |                      |                 |           |
| <b>Total Credits</b> |   | <b>15</b> | <b>Total Credits</b> |                 | <b>10</b> |

### 3.3 English Level 3: TOEFL < 430

**TOTAL CREDITS: 185**

| Freshman Year (Year 1)                   |   |           |  |                                 |           |
|--|---|-----------|--|---------------------------------|-----------|
| Semester 1                               |   | Crds      | Semester 2                               |                                 | Crds      |
| EN048IU<br>EN049IU<br>EN050IU<br>EN051IU | IE1   | 32        | EN052IU<br>EN053IU<br>EN054IU<br>EN055IU | IE2                             | 12        |
| PT001IU                                  | Physical Training 1                               | 0         | MA001IU                                  | Calculus 1                      | 4         |
|  |   |           | PH013IU                                  | Physics 1                       | 2         |
|  |   |           | PH014IU                                  | Physics 2                       | 2         |
|  |   |           | PT002IU                                  | Physical Training 2             | 0         |
| <b>Total Credits</b>                     |   | <b>32</b> | <b>Total Credits</b>                     |                                 | <b>20</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      |
| CH011IU                                  | Chemistry for Engineers                           | 3         | MA023IU                                  | Calculus 3                      | 4         |
| CH012IU                                  | Chemistry Laboratory                              | 1         | IS014IU                                  | Analytical Physics 2B           | 3         |
| MA003IU                                  | Calculus 2  | 4         | IS015IU                                  | Analytical Physics 2B Lab       | 1         |
| PH015IU                                  | Physics 3   | 2         | IS020IU                                  | Engineering Economy             | 3         |
| PH016IU                                  | Physics 3 Lab                                     | 1         | IS002IU                                  | Introduction to Computing       | 3         |
| IS001IU                                  | Introduction to Industrial Engineering            | 1         | IS005IU                                  | Engineering Mechanics – Statics | 3         |
| IS006IU                                  | IE lab  | 2         | EN011IU                                  | Writing AE2                     | 2         |

|                             |  |             |                      |  |             |
|-----------------------------|--|-------------|----------------------|--|-------------|
| EN007IU                     | Writing AE1  | 2           | EN012IU              | Speaking AE2                                       | 2           |
| EN008IU                     | Listening AE1                                      | 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>    |                      |  |             |
| <b>Junior Year (Year 3)</b> |  |             |                      |  |             |
| <b>Semester 5</b>           |  | <b>Crds</b> | <b>Semester 6</b>    |  | <b>Crds</b> |
| MA024IU                     | Differential Equations                             | 4           | IS017IU              | Work design & Ergonomics                           | 3           |
| IS004IU                     | Engineering Probability & Statistics               | 4           | IS019IU              | Production Management                              | 3           |
| IS016IU                     | Engineering Mechanics – Dynamics                   | 3           | IS024IU              | Probabilistic Models in OR                         | 3           |
| IS034IU                     | Product Design & Development                       | 3           | IS028IU              | Simulation Models in IE                            | 4           |
| IS021IU                     | Deterministic models in OR                         | 3           | <b>IS__IU</b>        | <b>ISE Elective Course (choose 1 course below)</b> | <b>3</b>    |
| IS022IU                     | Database Systems                                   | 3           | IS031IU              | Experimental Design                                |             |
|                             |  |             | IS018IU              | CAD/CAM  |             |
| <b>Total Credits</b>        |  | <b>20</b>   | <b>Total Credits</b> |  | <b>16</b>   |
| <b>Senior Year (Year 4)</b> |  |             |                      |  |             |
| <b>Semester 7</b>           |  | <b>Crds</b> | <b>Semester 8</b>    |  | <b>Crds</b> |
| IS025IU                     | Quality Management                                 | 3           | IS026IU              | Project Management                                 | 3           |
| IS051IU                     | Communication skills                               | 3           | PE008IU              | Critical thinking                                  | 3           |
| IS027IU                     | Scheduling & Sequencing                            | 3           | <b>IS__IU</b>        | <b>ISE Elective Course (choose 2 course below)</b> | <b>6</b>    |
| IS029IU                     | Supply chain & Logistics Management                | 3           | IS033IU              | Multi-Criteria Decision Making                     |             |
| <b>IS__IU</b>               | <b>ISE Elective Course (choose 2 course below)</b> | <b>6</b>    | IS045IU              | Leadership   |             |
| IS032IU                     | Facility Layout                                    |             | IS041IU              | Lean Production                                    |             |

|                             |  |           |                      |                                |           |
|-----------------------------|--|-----------|----------------------|--------------------------------|-----------|
| IS040IU                     | Management Information System          |           | IS043IU              | Flexible Manufacturing Systems |           |
| IS023IU                     | Inventory Management                   |           | IS035IU              | Systems Engineering            |           |
| IS044IU                     | Computer Control Manufacturing Systems |           |                      | <b>Free Elective Course</b>    | <b>3</b>  |
| <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>  |                      |                                |           |
| <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 2014 and forwards)

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

**TOTAL CREDITS: 142**

| 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                           | 0 |  |           |
| PH014IU                 | Physics 2   | 2 | IS001IU   | Introduction to Industrial Engineering        | 1 |  |           |
| PT001IU                 | Physical Training 1                               | 0 | IS054IU   | Engineering Drawing                           | 3 |  |           |
| CH011IU                 | Chemistry for Engineers                           | 3 | PH015IU   | Physics 3                                     | 3 |  |           |
|                         |   |   | PE008IU   | Critical Thinking                             | 3 |  |           |
| <b>Total Credits</b>    |   |   | <b>15</b> | <b>Total Credits</b>                          |   |  | <b>18</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         | MA024IU              | Differential Equations                             | 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>  |                      |  |           |
| <b>Junior Year (Year 3)</b> |  |           |                      |  |           |
| <b>Semester 5</b>           |  | Crds      | <b>Semester 6</b>    |  | 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         | IS032IU              | Facility Layout                                    | 3         |
| <b>IS__IU</b>               | <b>ISE Elective Course (choose 1 course below)</b> | <b>3</b>  | IS078IU              | Logistics engineering & supply chain design        | 3         |
| IS031IU                     | Experimental Design                                |           | <b>IS__IU</b>        | <b>ISE Elective Course (choose 1 course below)</b> | <b>3</b>  |
| IS018IU                     | CAD/CAM  |           | IS044IU              | Computer Control Manufacturing Systems             |           |
| IS058IU                     | Time series & forecasting technique                |           | IS068IU              | Procurement Management                             |           |
| <b>Total Credits</b>        |  | <b>15</b> | <b>Total Credits</b> |  | <b>18</b> |
| <b>Summer Semester</b>      |  | Crds      |                      |  |           |
| IS053IU                     | Internship 2                                       | 3         |                      |  |           |
| <b>Total Credits</b>        |  | <b>3</b>  |                      |  |           |
| <b>Senior Year (Year 4)</b> |  |           |                      |  |           |
| <b>Semester 7</b>           |  | Crds      | <b>Semester 8</b>    |  | Crds      |
| IS033IU                     | Multi-Criteria Decision Making                     | 3         | IS048IU              | Thesis research                                    | 10        |

|                      |   |           |                      |  |           |
|----------------------|---|-----------|----------------------|--|-----------|
| IS041IU              | Lean Production   | 3         |                      |  |           |
| IS__IU               | <b>ISE Elective Course<br/>(choose 3 courses<br/>below)</b> | <b>9</b>  |                      |  |           |
| IS080IU              | Creative Thinking   |           |                      |  |           |
| IS035IU              | Systems Engineering   |           |                      |  |           |
| IS043IU              | Flexible Manufacturing<br>Systems                           |           |                      |  |           |
| IS045IU              | Leadership  |           |                      |  |           |
| IS023IU              | Inventory Management  |           |                      |  |           |
| BA146IU              | Retail Management   |           |                      |  |           |
| IS067IU              | International<br>Transportation &<br>Logistics              |           |                      |  |           |
| IS062IU              | E-Logistics in Supply<br>Chain Management                   |           |                      |  |           |
| <b>Total Credits</b> |   | <b>15</b> | <b>Total Credits</b> |  | <b>10</b> |

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

**TOTAL CREDITS: 159**

| 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                               | 0 | CH011IU   | Chemistry for Engineers                | 3 |  |           |
| MA001IU                 | Calculus 1  | 4 | PH013IU   | Physics 1                              | 2 |  |           |
|                         |   |   | PH014IU   | Physics 2                              | 2 |  |           |
|                         |   |   | PT002IU   | Physical Training 2                    | 0 |  |           |
|                         |   |   | MA003IU   | Calculus 2                             | 4 |  |           |
|                         |   |   | IS001IU   | Introduction to Industrial Engineering | 1 |  |           |
| <b>Total Credits</b>    |   |   | <b>20</b> | <b>Total Credits</b>                   |   |  | <b>16</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 | IS020IU   | Engineering Economy                    | 3 |  |           |
| IS019IU                 | Production Management                             | 3 | IS081IU   | Deterministic models in OR             | 4 |  |           |
| MA023IU                 | Calculus 3  | 4 | MA024IU   | Differential Equations                 | 2 |  |           |
| IS004IU                 | Engineering Probability & Statistics              | 4 | PE008IU   | Critical Thinking                      | 3 |  |           |
| EN011IU                 | Writing AE2                                       | 2 | IS054IU   | Engineering Drawing                    | 3 |  |           |
| EN012IU                 | Speaking AE2                                      | 2 | PH015IU   | Physics 3                              | 3 |  |           |
| <b>Total Credits</b>    |   |   | <b>17</b> | <b>Total Credits</b>                   |   |  | <b>18</b> |
| Summer Semester         |   |   | Crds      |  |   |  |           |
|                         | Military Training                                 | 0 |           |  |   |  |           |
| <b>Total Credits</b>    |   |   | <b>0</b>  |  |   |  |           |



| Junior Year (Year 3) |   |           |                      |  |           |      |
|----------------------|---|-----------|----------------------|--|-----------|------|
| Semester 5           |   |           | Crds                 | Semester 6   |           | Crds |
| IS016IU              | Engineering Mechanics – Dynamics                    | 3         | IS077IU              | Introduction to Programming – C++/C#, Python       | 2         |      |
| IS076IU              | Introduction to Computing - Matlab Application      | 3         | IS079IU              | Scientific Writing                                 | 2         |      |
| IS025IU              | Quality Management                                  | 3         | IS034IU              | Product Design & Development                       | 3         |      |
| IS026IU              | Project Management                                  | 3         | IS017IU              | Work design & Ergonomics + Lab                     | 4         |      |
| IS040IU              | Management Information System                       | 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>  | 3         | IS044IU              | Computer Control Manufacturing Systems             |           |      |
| IS031IU              | Experimental Design                                 |           | IS068IU              | Procurement Management                             |           |      |
| IS018IU              | CAD/CAM   |           |                      |  |           |      |
| IS058IU              | Time series & forecasting technique                 |           |                      |  |           |      |
| <b>Total Credits</b> |   | <b>18</b> | <b>Total Credits</b> |  | <b>14</b> |      |
| Summer Semester      |   |           | Crds                 |  |           |      |
| IS052IU              | Internship 1  | 2         |                      |  |           |      |
| <b>Total Credits</b> |   | <b>2</b>  |                      |  |           |      |
| Senior Year (Year 4) |   |           |                      |  |           |      |
| Semester 7           |   |           | Crds                 | Semester 8   |           | Crds |
| IS033IU              | Multi-Criteria Decision Making                      | 3         | IS032IU              | Facility Layout                                    | 3         |      |
| IS041IU              | Lean Production                                     | 3         | IS027IU              | Scheduling & Sequencing                            | 3         |      |
|                      |   |           | IS078IU              | Logistics engineering & supply chain design        | 3         |      |
| IS024IU              | Probabilistic Models in OR                          | 3         | IS028IU              | Simulation Models in IE                            | 4         |      |
| IS__IU               | <b>ISE Elective Course (choose 3 courses below)</b> | <b>9</b>  |                      |  |           |      |
| IS080IU              | Creative Thinking                                   |           |                      |  |           |      |
| IS035IU              | Systems Engineering                                 |           |                      |  |           |      |
| IS043IU              | Flexible Manufacturing Systems                      |           |                      |  |           |      |
| IS045IU              | Leadership  |           |                      |  |           |      |

|                             |  |             |                      |           |  |
|-----------------------------|--|-------------|----------------------|-----------|--|
| IS023IU                     | Inventory Management                     |             |                      |           |  |
| BA146IU                     | Retail Management                        |             |                      |           |  |
| IS067IU                     | International Transportation & Logistics |             |                      |           |  |
| IS062IU                     | E-Logistics in Supply Chain Management   |             |                      |           |  |
| <b>Total Credits</b>        |  | <b>18</b>   | <b>Total Credits</b> | <b>13</b> |  |
| <b>Summer Semester</b>      |  | <b>Crds</b> |                      |           |  |
| IS053IU                     | Internship 2                             | 3           |                      |           |  |
| <b>Total Credits</b>        |  | <b>3</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>   |                      |           |  |

### 4.3 English Level 3: TOEFL < 430

**TOTAL CREDITS: 181**

|                               |                          |    |             |  |   |             |
|-------------------------------|--------------------------|----|-------------|--|---|-------------|
| <b>Freshman Year (Year 1)</b> |                          |    |             |  |   |             |
| <b>Semester 1</b>             |                          |    | <b>Crds</b> | <b>Semester 2</b>                      |   | <b>Crds</b> |
| EN072IU                       | Reading & Writing IE1    | 11 | EN074IU     | Reading & writing IE2                  | 8 |             |
| EN073IU                       | Listening & Speaking IE1 | 11 | EN075IU     | Listening & speaking IE2               | 8 |             |
| PT001IU                       | Physical Training 1      | 0  | PT002IU     | Physical Training 2                    | 0 |             |
|                               |                          |    | IS001IU     | Introduction to Industrial Engineering | 1 |             |
|                               |                          |    | MA001IU     | Calculus 1                             | 4 |             |
| <b>Total Credits</b>          |                          |    | <b>22</b>   | <b>Total Credits</b>                   |   | <b>21</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>   |                      |  |             |
| <b>Sophomore Year (Year 2)</b> |   |             |                      |  |             |
| <b>Semester 3</b>              |   | <b>Crds</b> | <b>Semester 4</b>    |  | <b>Crds</b> |
| MA027IU                        | Applied Linear Algebra                            | 2           | EN011IU              | Writing AE2                                  | 2           |
| EN007IU                        | Writing AE1                                       | 2           | EN012IU              | Speaking AE2                                 | 2           |
| EN008IU                        | Listening AE1                                     | 2           | PE008IU              | Critical Thinking                            | 3           |
| CH011IU                        | Chemistry for Engineers                           | 3           | IS054IU              | Engineering Drawing                          | 3           |
| PH013IU                        | Physics 1   | 2           | MA023IU              | Calculus 3                                   | 4           |
| PH014IU                        | Physics 2   | 2           | PH015IU              | Physics 3                                    | 3           |
| MA003IU                        | Calculus 2  | 4           |                      |  |             |
| <b>Total Credits</b>           |   | <b>17</b>   | <b>Total Credits</b> |  | <b>17</b>   |
| <b>Summer Semester</b>         |   | <b>Crds</b> |                      |  |             |
|                                | Military Training                                 | 0           |                      |  |             |
| <b>Total Credits</b>           |   | <b>0</b>    |                      |  |             |
| <b>Junior Year (Year 3)</b>    |   |             |                      |  |             |
| <b>Semester 5</b>              |   | <b>Crds</b> | <b>Semester 6</b>    |  | <b>Crds</b> |
| IS004IU                        | Engineering Probability & Statistics              | 4           | 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           |
| IS016IU                        | Engineering Mechanics – Dynamics                  | 3           | IS034IU              | Product Design & Development                 | 3           |
| MA024IU                        | Differential Equations                            | 2           | IS021IU              | Deterministic models in OR                   | 4           |
| <b>Total Credits</b>           |   | <b>15</b>   | <b>Total Credits</b> |  | <b>16</b>   |
| <b>Summer Semester</b>         |   | <b>Crds</b> |                      |  |             |
| IS052IU                        | Internship 1                                      | 2           |                      |  |             |
| <b>Total Credits</b>           |   | <b>2</b>    |                      |  |             |
| <b>Senior Year (Year 4)</b>    |   |             |                      |  |             |
| <b>Semester 7</b>              |   | <b>Crds</b> | <b>Semester 8</b>    |  | <b>Crds</b> |
| IS040IU                        | Management Information System                     | 3           | IS028IU              | Simulation Models in IE                      | 4           |

Department of Industrial and Systems Engineering

|                             |   |           |                      |  |           |
|-----------------------------|---|-----------|----------------------|--|-----------|
| IS026IU                     | Project Management                                  | 3         | IS027IU              | Scheduling & Sequencing                            | 3         |
| IS024IU                     | Probabilistic Models in OR                          | 3         | IS032IU              | Facility Layout                                    | 3         |
| IS025IU                     | Quality Management                                  | 3         | IS078IU              | Logistics engineering & supply chain design        | 3         |
| IS__IU                      | <b>ISE Elective Course (choose 1 course below)</b>  | <b>3</b>  | IS079IU              | Scientific Writing                                 | 2         |
| IS031IU                     | Experimental Design                                 |           | IS__IU               | <b>ISE Elective Course (choose 1 course below)</b> | <b>3</b>  |
| IS018IU                     | CAD/CAM   |           | IS044IU              | Computer Control Manufacturing Systems             |           |
| IS058IU                     | Time series & forecasting technique                 |           | IS068IU              | Procurement Management                             |           |
| <b>Total Credits</b>        |   | <b>15</b> | <b>Total Credits</b> |  | <b>18</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      | <b>Semester 10</b>   |  | Crds      |
| IS033IU                     | Multi-Criteria Decision Making                      | 3         | IS048IU              | Thesis research                                    | 10        |
| IS041IU                     | Lean Production                                     | 3         |                      |  |           |
| IS__IU                      | <b>ISE Elective Course (choose 3 courses below)</b> | <b>9</b>  |                      |  |           |
| IS080IU                     | Creative Thinking                                   |           |                      |  |           |
| IS035IU                     | Systems Engineering                                 |           |                      |  |           |
| IS043IU                     | Flexible Manufacturing Systems                      |           |                      |  |           |
| IS045IU                     | Leadership  |           |                      |  |           |
| IS023IU                     | Inventory Management                                |           |                      |  |           |
| BA146IU                     | Retail Management                                   |           |                      |  |           |
| IS067IU                     | International Transportation & Logistics            |           |                      |  |           |
| IS062IU                     | E-Logistics in Supply Chain Management              |           |                      |  |           |
| <b>Total Credits</b>        |   | <b>15</b> | <b>Total Credits</b> |  | <b>10</b> |





# TWINNING PROGRAM

(Curricular for the first two years in IU)

## 5. IU-RG (Rutgers University) PROGRAM

### 5.1 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         |
|                         |                         |           | 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> |

## 5.2 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> |

### 5.3 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>24</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> |
| <b>Junior Year (Year 3)</b> |                                     |           |                      |  |           |
| <b>Semester 5</b>           |                                     |           | <b>Crds</b>          |  |           |
| MA024RG                     | Differential Equations              | 4         |                      |  |           |
| PH015RG                     | Physics 3                           | 3         |                      |  |           |
| PH016RG                     | Physics 3 Lab                       | 1         |                      |  |           |
| IS016RG                     | Engineering Mechanics<br>– Dynamics | 3         |                      |  |           |
| IS014RG                     | Analytical Physics IIB              | 3         |                      |  |           |
| IS015RG                     | Analytical Physics IIB<br>Lab       | 1         |                      |  |           |
| PE008RG                     | Critical thinking                   | 3         |                      |  |           |
| <b>Total Credits</b>        |                                     | <b>18</b> |                      |  |           |

## 6. IU-SB PROGRAM (The State University of New York, University at Binghamton)

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

**TOTAL CREDITS: 58**

| 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         | PE008SB              | Critical Thinking                      | 3         |
| PH014SB                 | Physics 2                       | 2         | IS001SB              | Introduction to Industrial Engineering | 1         |
| CH011SB                 | Chemistry for Engineers         | 3         | IS005SB              | Engineering Mechanics - Statics        | 3         |
| CH012SB                 | Chemistry Laboratory            | 1         | PT002SB              | Physical Training 2                    | 0         |
| PT001SB                 | Physical Training 1             | 0         |                      |  |           |
| <b>Total Credits</b>    |                                 | <b>16</b> | <b>Total Credits</b> |  | <b>15</b> |
| Sophomore Year (Year 2) |                                 |           |                      |  |           |
| Semester 3              |                                 | Crds      | Semester 4           |  | Crds      |
| MA024RG,<br>MA023SB     | Differential Equations or Cal 3 | 4         | MA028SB              | Applied Linear Algebra                 | 4         |
| PH015SB                 | Physics 3                       | 3         | IS017SB              | Human Factors                          | 4         |
| PH016SB                 | Physics 3 Lab                   | 1         | IS002SB              | Introduction to Computing              | 3         |
| IS006SB                 | IE Lab                          | 2         | PH012SB              | Physics 4                              | 2         |
| IS004SB                 | Engineering Probability         | 4         |                      |  |           |
| <b>Total Credits</b>    |                                 | <b>14</b> | <b>Total Credits</b> |  | <b>13</b> |

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

### TOTAL CREDITS: 74

| 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         |
| MA001SB                  | Calculus 1                      | 4         | MA003SB              | Calculus 2                             | 4         |
| CH011SB                  | Chemistry for Engineers         | 3         | PH013SB              | Physics 1                              | 2         |
| CH012SB                  | Chemistry Laboratory            | 1         | PH014SB              | Physics 2                              | 2         |
| PT001SB                  | Physical Training 1             | 0         | IS005SB              | Engineering Mechanics – Statics        | 3         |
|                          |                                 |           | PT002SB              | Physical Training 2                    | 0         |
|                          |                                 |           | IS001SB              | Introduction to Industrial Engineering | 1         |
| <b>Total Credits</b>     |                                 | <b>24</b> | <b>Total Credits</b> |  | <b>16</b> |
| Sophomore Year (Year 2)  |                                 |           |                      |  |           |
| Semester 3               |                                 | Crds      | Semester 4           |  | Crds      |
| EN011SB                  | Writing AE2                     | 2         | MA028SB              | Applied Linear Algebra                 | 4         |
| EN012SB                  | Listening AE2                   | 2         | PE008SB              | Critical thinking                      | 3         |
| MA024RG<br>or<br>MA023SB | Differential Equations or Cal 3 | 4         | IS002SB              | Introduction to Computing              | 3         |
| PH015SB                  | Physics 3                       | 3         | IS017SB              | Human Factors                          | 4         |
| PH016SB                  | Physics 3 Lab                   | 1         | PH012SB              | Physics 4                              | 2         |
| IS006SB                  | IE lab                          | 2         |                      |  |           |
| IS004SB                  | Engineering Probability         | 4         |                      |  |           |
| <b>Total Credits</b>     |                                 | <b>18</b> | <b>Total Credits</b> |  | <b>16</b> |

### 6.3 English Level 1: TOEFL < 430

#### TOTAL CREDITS: 96

| 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         | PH013SB              | Physics 1                       | 2         |
|                         |                          |           | MA001SB              | Calculus 1                      | 4         |
|                         |                          |           | IS001SB              | Introduction to IE              | 1         |
|                         |                          |           | PT002SB              | Physical training 2             | 0         |
| <b>Total Credits</b>    |                          | <b>22</b> | <b>Total Credits</b> |                                 | <b>23</b> |
| Sophomore Year (Year 2) |                          |           |                      |                                 |           |
| Semester 3              |                          | Crds      | Semester 4           |                                 | Crds      |
| CH011SB                 | Chemistry for Engineers  | 3         | MA024RG,<br>MA023SB  | Differential Equations or Cal 3 | 4         |
| CH012SB                 | Chemistry Laboratory     | 1         | IS017SB              | Human Factors                   | 4         |
| MA003SB                 | Calculus 2               | 4         | IS005SB              | Engineering Mechanics – Statics | 3         |
| PH014SB                 | Physics 2                | 2         | IS002SB              | Introduction to Computing       | 3         |
| IS006SB                 | IE lab                   | 2         | EN011SB              | Writing AE2                     | 2         |
| EN007SB                 | Writing AE1              | 2         | EN012SB              | Listening AE2                   | 2         |
| EN008SB                 | Listening AE1            | 2         |                      |                                 |           |
| <b>Total Credits</b>    |                          | <b>16</b> | <b>Total Credits</b> |                                 | <b>18</b> |

| Junior Year (Year 3) |                         |           |
|----------------------|-------------------------|-----------|
| Semester 5           |                         | Crds      |
| PE008SB              | Critical thinking       | 3         |
| PH015SB              | Physics 3               | 3         |
| PH016SB              | Physics 3 Lab           | 1         |
| IS004SB              | Engineering Probability | 4         |
| MA028SB              | Applied Linear Algebra  | 4         |
| PH012SB              | Physics 4               | 2         |
| <b>Total Credits</b> |                         | <b>14</b> |

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



# LOGISTICS & SCM PROGRAM



## 7. LOGISTICS & SCM PROGRAM (for batch 2014 and forwards)

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

**TOTAL CREDITS: 143**

| 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                                 | 0         |
| PT001IU                | Physical Training 1                               | 0         | 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>15</b> | <b>Total Credits</b> |   | <b>18</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      |
| IS019IU                 | Production Management                               | 3         | IS020IU              | Engineering Economy                           | 3         |
| IS076IU                 | Introduction to Computing – MatLab Application      | 3         | IS021IU              | Deterministic models in OR                    | 4         |
| IS004IU                 | Engineering Probability & Statistics                | 4         | IS057IU              | Warehouse Engineering Management              | 3         |
| IS055IU                 | Principles of Logistics and Supply Chain Management | 3         | IS077IU              | Introduction to Programming – C++/C# , Python | 2         |
| BA081IU                 | Business Law  | 3         | BA003IU              | Principles Of Marketing                       | 3         |
| MA027IU                 | Applied Linear Algebra                              | 2         | BA084IU              | Import – Export Management                    | 3         |
| <b>Total Credits</b>    |   | <b>18</b> | <b>Total Credits</b> |   | <b>18</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      |
| IS061IU                 | Information Systems in Supply Chain                 | 3         | IS073IU              | Scientific Writing                            | 2         |
| IS023IU                 | Inventory Management                                | 3         | IS028IU              | Simulation Models in IE                       | 4         |
| IS059IU                 | Materials Handling Systems                          | 3         | IS027IU              | Scheduling & Sequencing                       | 3         |
| BA146IU                 | Retail Management                                   | 3         | IS078IU              | Logistic engineering & supply chain design    | 3         |
| IS__IU                  | <b>ISE Elective Course (choose 1 course below)</b>  | <b>3</b>  | IS068IU              | Procurement Management                        | 3         |
| IS058IU                 | Time series & forecasting techniques                |           | BA184IU              | Financial Accounting                          | 4         |

|                             |   |           |                      |                 |           |
|-----------------------------|---|-----------|----------------------|-----------------|-----------|
| IS024IU                     | Probabilistic Models in OR                          |           |                      |                 |           |
| IS035IU                     | Systems Engineering                                 |           |                      |                 |           |
| <b>Total Credits</b>        |   | <b>15</b> | <b>Total Credits</b> |                 | <b>19</b> |
| <b>Summer Semester</b>      |   | Crds      |                      |                 |           |
| IS053IU                     | Internship 2  | 3         |                      |                 |           |
| <b>Total Credits</b>        |   | <b>3</b>  |                      |                 |           |
| <b>Senior Year (Year 4)</b> |   |           |                      |                 |           |
| <b>Semester 7</b>           |   | Crds      | <b>Semester 8</b>    |                 | Crds      |
| IS033IU                     | Multi-Criteria Decision Making                      | 3         | IS048IU              | Thesis research | 10        |
| IS067IU                     | International Transportation & Logistics            | 3         |                      |                 |           |
| IS026IU                     | Project Management                                  | 3         |                      |                 |           |
| <b>IS__IU</b>               | <b>ISE Elective Course (choose 2 courses below)</b> | <b>6</b>  |                      |                 |           |
| IS025IU                     | Quality Management                                  |           |                      |                 |           |
| IS062IU                     | E-Logistics in Supply chain management              |           |                      |                 |           |
| IS063IU                     | Sustainability in Supply Chain                      |           |                      |                 |           |
| IS064IU                     | Entrepreneurship In Supply Chain                    |           |                      |                 |           |
| IS065IU                     | Supply Security And Risk Management                 |           |                      |                 |           |
| IS066IU                     | Data Mining In Supply Chain                         |           |                      |                 |           |
| IS072IU                     | Port Planning and Operations                        |           |                      |                 |           |
| IS074IU                     | Creative Thinking                                   |           |                      |                 |           |
| BA028IU                     | Organizational Behavior                             |           |                      |                 |           |

|                      |  |           |                      |  |           |
|----------------------|--|-----------|----------------------|--|-----------|
| BA032IU              | Sales Management                         |           |                      |  |           |
| IS045IU              | Leadership                               |           |                      |  |           |
| BA079IU              | Foundations of Human Resource Management |           |                      |  |           |
| <b>Total Credits</b> |  | <b>15</b> | <b>Total Credits</b> |  | <b>10</b> |

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

### TOTAL CREDITS: 159

| 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                                 | 0 | MA003IU   | Calculus 2  | 4 |  |           |
| MA001IU                 | Calculus 1  | 4 | IS056IU   | Introduction to Logistics & Supply Chain Management | 1 |  |           |
|                         |   |   | PT002IU   | Physical Training 2                                 | 0 |  |           |
|                         |   |   | PH013IU   | Physics 1   | 2 |  |           |
|                         |   |   | PH014IU   | Physics 2   | 2 |  |           |
|                         |   |   | CH011IU   | Chemistry for Engineers                             | 3 |  |           |
| <b>Total Credits</b>    |   |   | <b>20</b> | <b>Total Credits</b>                                |   |  | <b>16</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      |
| EN011IU                 | Writing AE2   | 2 | IS020IU   | Engineering Economy                                 | 3 |  |           |
| EN012IU                 | Speaking AE2  | 2 | IS021IU   | Deterministic models in OR                          | 4 |  |           |
| IS019IU                 | Production Management                               | 3 | PE008IU   | Critical Thinking                                   | 3 |  |           |
| IS004IU                 | Engineering Probability & Statistics                | 4 | BA003IU   | Principles Of Marketing                             | 3 |  |           |
| IS055IU                 | Principles of Logistics and Supply Chain Management | 3 | IS054IU   | Engineering Drawing                                 | 3 |  |           |
| PH015IU                 | Physics 3   | 3 |           |   |   |  |           |
| MA027IU                 | Applied Linear Algebra                              | 2 |           |   |   |  |           |
| <b>Total Credits</b>    |   |   | <b>19</b> | <b>Total Credits</b>                                |   |  | <b>16</b> |

| Summer Semester      |  | Crds      |                      |   |           |
|----------------------|--|-----------|----------------------|---|-----------|
|                      | Military Training                                  | 0         |                      |   |           |
| <b>Total Credits</b> |  | <b>0</b>  |                      |   |           |
| Junior Year (Year 3) |  |           |                      |   |           |
| Semester 5           |  | Crds      | Semester 6           |   | Crds      |
| IS076IU              | Introduction to Computing – MatLab Application     | 3         | IS077IU              | Introduction to Programming – C++/C# , Python | 2         |
| BA081IU              | Business Law                                       | 3         | BA084IU              | Import – Export Management                    | 3         |
| IS061IU              | Information systems in Supply chain                | 3         | IS073IU              | Scientific Writing                            | 2         |
| IS023IU              | Inventory Management                               | 3         | BA184IU              | Financial Accounting                          | 4         |
| IS059IU              | Materials Handling Systems                         | 3         | BA146IU              | Retail Management                             | 3         |
| IS__IU               | <b>ISE Elective Course (choose 1 course below)</b> | <b>3</b>  | IS057IU              | Warehouse Engineering Management              | 3         |
| IS058IU              | Time series & forecasting techniques               |           |                      |   |           |
| IS024IU              | Probabilistic Models in OR                         |           |                      |   |           |
| IS035IU              | Systems Engineering                                |           |                      |   |           |
| <b>Total Credits</b> |  | <b>18</b> | <b>Total Credits</b> |   | <b>17</b> |
| Summer Semester      |  | Crds      |                      |   |           |
| IS052IU              | Internship 1                                       | 2         |                      |   |           |
| <b>Total Credits</b> |  | <b>2</b>  |                      |   |           |
| Senior Year (Year 4) |  |           |                      |   |           |
| Semester 7           |  | Crds      | Semester 8           |   | Crds      |
| IS026IU              | Project Management                                 | 3         | IS028IU              | Simulation Models in IE                       | 4         |
| IS067IU              | International Transportation & Logistics           | 3         | IS027IU              | Scheduling & Sequencing                       | 3         |
| IS032IU              | Multi-Criteria Decision Making                     | 3         | IS078IU              | Logistic engineering & supply chain design    | 3         |
| IS__IU               | <b>ISE Elective Course (choose 2 course below)</b> | <b>6</b>  | IS068IU              | Procurement Management                        | 3         |
| IS025IU              | Quality Management                                 |           |                      |   |           |
| IS062IU              | E-Logistics in Supply chain management             |           |                      |   |           |
| IS063IU              | Sustainability in Supply Chain                     |           |                      |   |           |

|                             |  |           |                      |           |
|-----------------------------|--|-----------|----------------------|-----------|
| IS065IU                     | Supply Security And Risk Management      |           |                      |           |
| IS066IU                     | Data Mining In Supply Chain              |           |                      |           |
| IS072IU                     | Port Planning and Operations             |           |                      |           |
| BA028IU                     | Organizational Behavior                  |           |                      |           |
| BA032IU                     | Sales Management                         |           |                      |           |
| IS045IU                     | Leadership                               |           |                      |           |
| IS074IU                     | Creative Thinking                        |           |                      |           |
| BA079IU                     | Foundations of Human Resource Management |           |                      |           |
| IS064IU                     | Entrepreneurship In Supply Chain         |           |                      |           |
| <b>Total Credits</b>        |  | <b>15</b> | <b>Total Credits</b> | <b>13</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> |                      |           |

### 7.3 English Level 3: TOEFL < 430

#### TOTAL CREDITS: 181

| 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                               | 0  | MA001IU   | Calculus 1  | 4 |  |           |  |
|                         |   |    | PT002IU   | Physical Training 2                                 | 0 |  |           |  |
|                         |   |    | IS056IU   | Introduction to Logistics & Supply Chain Management | 1 |  |           |  |
| <b>Total Credits</b>    |   |    | <b>22</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  | EN011IU   | Writing AE2   | 2 |  |           |  |
| EN007IU                 | Writing AE1                                       | 2  | EN012IU   | Speaking AE2  | 2 |  |           |  |
| EN008IU                 | Listening AE1                                     | 2  | PE008IU   | Critical Thinking                                   | 3 |  |           |  |
| CH011IU                 | Chemistry for Engineers                           | 3  | IS054IU   | Engineering Drawing                                 | 3 |  |           |  |
| PH013IU                 | Physics 1   | 2  | PH015IU   | Physics 3   | 3 |  |           |  |
| PH014IU                 | Physics 2   | 2  | IS077IU   | Introduction to Programming – C++/C#, Python        | 2 |  |           |  |
| MA003IU                 | Calculus 2  | 4  |           |   |   |  |           |  |
| <b>Total Credits</b>    |   |    | <b>17</b> | <b>Total Credits</b>                                |   |  | <b>15</b> |  |
| Summer Semester         |   |    | Crds      |   |   |  |           |  |
|                         | Military Training                                 | 0  |           |   |   |  |           |  |
| <b>Total Credits</b>    |   |    | <b>0</b>  |   |   |  |           |  |
| Junior Year (Year 3)    |   |    |           |   |   |  |           |  |
| Semester 5              |   |    | Crds      | Semester 6  |   |  | Crds      |  |
| IS019IU                 | Production Management                             | 3  | IS021IU   | Deterministic models in OR                          | 4 |  |           |  |



**Department of Industrial and Systems Engineering**

|                             |   |           |                      |  |           |
|-----------------------------|---|-----------|----------------------|--|-----------|
| IS076IU                     | Introduction to Computing – MatLab Application      | 3         | IS020IU              | Engineering Economy                        | 3         |
| IS055IU                     | Principles Logistics and Supply Chain Management    | 3         | IS057IU              | Warehouse Engineering Management           | 3         |
| BA081IU                     | Business Law  | 3         | BA184IU              | Financial Accounting                       | 4         |
| IS004IU                     | Engineering Probability & Statistics                | 4         | BA003IU              | Principles Of Marketing                    | 3         |
|                             |   |           | BA084IU              | Import – Export Management                 | 3         |
| <b>Total Credits</b>        |   | <b>16</b> | <b>Total Credits</b> |  | <b>20</b> |
| <b>Summer semester</b>      |   | Crds      |                      |  |           |
| IS052IU                     | Internship 1  | 2         |                      |  |           |
| <b>Total Credits</b>        |   | <b>2</b>  |                      |  |           |
| <b>Senior Year (Year 4)</b> |   |           |                      |  |           |
| <b>Semester 7</b>           |   | Crds      | <b>Semester 8</b>    |  | Crds      |
| IS061IU                     | Information systems in Supply chain                 | 3         | IS028IU              | Simulation Models in IE                    | 4         |
| IS023IU                     | Inventory Management                                | 3         | IS027IU              | Scheduling & Sequencing                    | 3         |
| IS059IU                     | Materials Handling Systems                          | 3         | IS078IU              | Logistic engineering & supply chain design | 3         |
| BA146IU                     | Retail Management                                   | 3         | IS068IU              | Procurement Management                     | 3         |
| <b>IS__IU</b>               | <b>ISE Elective Course (choose 1 course below)</b>  | <b>3</b>  | IS073IU              | Scientific Writing                         | 2         |
| IS058IU                     | Time series & forecasting techniques                |           |                      |  |           |
| IS024IU                     | Probabilistic Models in OR                          |           |                      |  |           |
| IS035IU                     | Systems Engineering                                 |           |                      |  |           |
| <b>Total Credits</b>        |   | <b>15</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      | <b>Semester 8</b>    |  | Crds      |
| IS032IU                     | Multi-Criteria Decision Making                      | 3         | IS048IU              | <b>Thesis research</b>                     | 10        |
| IS067IU                     | International Transportation & Logistics            | 3         |                      |  |           |
| IS026IU                     | Project Management                                  | 3         |                      |  |           |
| <b>IS__IU</b>               | <b>ISE Elective Course (choose 2 courses below)</b> | <b>6</b>  |                      |  |           |
| IS025IU                     | Quality Management                                  |           |                      |  |           |

|                      |  |           |                      |           |
|----------------------|--|-----------|----------------------|-----------|
| IS062IU              | E-Logistics in Supply chain management   |           |                      |           |
| IS063IU              | Sustainability in Supply Chain           |           |                      |           |
| IS064IU              | Entrepreneurship In Supply Chain         |           |                      |           |
| IS065IU              | Supply Security And Risk Management      |           |                      |           |
| IS066IU              | Data Mining In Supply Chain              |           |                      |           |
| IS072IU              | Port Planning and Operations             |           |                      |           |
| BA028IU              | Organizational Behavior                  |           |                      |           |
| BA032IU              | Sales Management                         |           |                      |           |
| IS045IU              | Leadership                               |           |                      |           |
| IS074IU              | Creative Thinking                        |           |                      |           |
| BA079IU              | Foundations of Human Resource Management |           |                      |           |
| <b>Total Credits</b> |  | <b>15</b> | <b>Total credits</b> | <b>10</b> |

## 8. 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      2 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.







**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 credits**

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.

**IS002IU      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.

**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.

**IS006IU      Introduction to Programming –      2 credits**  
**C++/C# , Python**



**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.

**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.

**IS021IU      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.

**IS022IU      Database Systems      3 credits**

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

**IS023IU      Inventory Management      3 credits**

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

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

**IS024IU      Probability Models in Operations Research      3 credits**

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

**IS025IU      Quality Management      3 credits**

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

**IS026IU      Project Management      3 credits**

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

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

**IS027IU      Scheduling and Sequencing      3 credits**

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

**IS028IU      Simulation Models In IE      4 credits**

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

**IS029IU      Logistics Engineering and Supply Chain Design      3 credits**

Logistics and Supply chain management involves a number of decisions that benefit by quantitative techniques of analysis and design. The course will explore modeling, computation implementation of solutions in some areas of Logistics and Supply Chain Management. The content also include 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      Design of Experiments      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.



**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.

**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.

**IS079IU      Scientific Writing      2 credits**

This course is offered for undergraduate students at ISE Department, 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.

**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      3 credits**  
**Management**

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

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

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

**IS057IU      Warehouse Engineering Management      3 credits**

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

**IS058IU      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.

**IS060IU      Distribution Management      3 credits**

Management of the firm's value-creation process from product development through order receipt and delivery to consumer. Alternative approaches to developing customer value and the role of the demand and supply chain in providing it.

**IS061IU      Information Systems in Supply Chain      3 credits**

Internal and inter-organizational information systems necessary for a supply chain to achieve competitive advantage. Topics include: design, development, implementation, and maintenance of supply chain information systems; enterprise

resource planning; advanced planning and scheduling, manufacturing execution systems; and the interface between manufacturing planning and control processes, logistics processes, and the information system.

**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 is 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.



**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.

**BA079IU Foundations of Human Resource Management 3 credits**

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

**BA081AU 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.

**BA084AU 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.



# 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 REGULATION**

### **A1. PROGRAM TRANSFER REGULATION**

- 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 TEACHING CREDIT – 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**
  - 5.1 Subjects**
  - 5.2 Subject's grade**

## **6. Semester GPA, cumulative GPA**

### **6.1 Semester GPA,**

### **6.2 Cumulative GPA**

## **7. Cumulative credits**

## **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 Changing 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/> .