

# Curriculum

## (Information Systems and Network Engineering)

**The total number of credits throughout the course is not less than 143 credits**

<b>1. General Education</b>		<b>30 credits</b>
<b>1.1 Required Courses</b>		<b>23 credits</b>
- Learner Person		15 credits
001101 ENGL 101	Fundamental English 1	3(3-0-6)
001102 ENGL 102	Fundamental English 2	3(3-0-6)
001201 ENGL 201	Critical Reading and Effective Writing	3(3-0-6)
001225 ENGL 225	English in Science and Technology Context	3(3-0-6)
3 credits must be selected from the following courses		
204100 CS 100	Information Technology and Modern Life	3(3-0-6)
261111 CPE111	Internet and Online Community	3(3-0-6)
953111 SE111	Software for Everyday Life	3(3-0-6)
- Co creator		4 credits
259192 ENGR 192	Skills for Professionalism and Entrepreneurship	1(0-3-1)
3 credits must be selected from the following courses		
013110 PSY110	Psychology and Daily Life	3(3-0-6)
050106 HUGE106	Humanistic Arts	3(3-0-6)
176100 LAGE100	Law and Modern World	3(3-0-6)
201114 SC114	Environmental Science in Today's World	3(3-0-6)
201117 SC117	Mathematics and Science in Civilization	3(3-0-6)
201190 SC190	Critical Thinking, Problem Solving and Science Communication	3(3-0-6)
207109 PHYS109	Life and the Universe	3(3-0-6)
207110 PHYS110	Physics: the Science that Changed the World	3(3-0-6)
259194 ENGR194	Characteristics and Values for Being a Professional Entrepreneur	1(0-3-1)
368100 ABM100	Starting an Agribusiness in a Changing World	3(3-0-6)
602201 BIOT201	Agro-Industrial Vision	1(0-3-0)
610111 AG111	Packaging for Marketing	3(3-0-6)
703103 MGMT103	Introduction to Entrepreneurship and Business	3(3-0-6)
751100 ECON100	Economics for Everyday Life	3(3-0-6)
851103 MC103	Life and Society through Media	3(3-0-6)
852100 DF100	Introduction to Film	3(3-0-6)
- Active Citizen		4 credits
140104 PG104	Citizenship	3(3-0-6)
259191 EGGR191	Principle of Being Professional	1(0-3-1)

**1.2 Elective Courses (from 2 categories)****7 credits**

(Learner Person)

009103	LS103	Information Literacy and Information Presentation	3(3-0-6)
154130	LS130	Geo-Information in Daily Life	3(3-0-6)
201100	SC100	Integrated Science	3(3-0-6)
203100	CHEM100	Chemistry in Everyday Life	3(3-0-6)
211100	BCT100	Eating Well: Better Living and Disease Prevention	3(3-0-6)
462130	PHP130	Medications in Everyday Life	3(3-0-6)
571116	NGGE116	Health and Working in the Digital Age	3(3-0-6)
701181	ACC181	Accounting for Non Accountants	3(3-0-6)
702101	FINA101	Finance for Daily Life	3(3-0-6)
705191	MKTG191	Smart Consumer	1(1-0-2)

(Active Citizen)

109114	FAGE114	Art in Everyday Life	3(3-0-6)
127100	GOV100	Politics in Everyday Life	3(3-0-6)
128100	PA100	Basic Good Governance in Administration	3(3-0-6)
154104	GEO104	Environmental Conservation	3(3-0-6)
256131	MN131	Urban Mining	3(3-0-6)
259193	ENGR193	Morality and Intelligence for Being a Professional	1(0-3-1)
259195	ENGR195	Managing Activities for Development	1(0-3-1)
801100	ARCT100	Architecture in Everyday Life	3(3-0-6)
951100	ANI100	Modern Life and Animation	3(3-0-6)

**2. Field of Specialization****a minimum of****107 credits****2.1 Core Courses****24 credits**

206161	MATH161	Calculus for Engineering 1	3(3-0-6)
206162	MATH162	Calculus for Engineering 2	3(3-0-6)
207105	PHYS105	Physics for Engineering and Agro-Industry Students 1	3(3-0-6)
252281	EE281	Fundamentals of Electronics Circuits for Information Systems and Network Engineering	3(3-0-6)
255201	IE201	Quantitative Analysis in Industrial Engineering	3(3-0-6)
269101	ISNE101	Introduction to Information Systems and Network Engineering	3(3-0-6)
269103	ISNE103	Programming for Information Systems and Network Engineering	3(3-0-6)
259104	ENGR104	Engineering Drawing	3(2-3-4)

**2.2 Major Courses****83 credits**

At least 36 credits in 2.2.1 and 2.2.2 must be 300 or higher level courses, among such courses there must be at least 18 credits from 400 or higher level courses.

**2.2.1 Required Courses**

2.2.1.1 Normal

71 credits

**Organizations and Information Systems**

261446	CPE 446	Information Systems	3(3-0-6)
269105	ISNE105	Information Systems and Network Engineering Laboratory 1	1(0-3-0)
269201	ISNE201	Information Systems and Network Engineering Laboratory 2	1(0-3-0)
269370	ISNE370	Project Management for Information Systems and Network Engineering	3(3-0-6)
269470	ISNE470	Information Technology Service Management	3(3-0-6)

### Technology for Application

269200	ISNE200	Web Programming Language	3(2-3-4)
269340	ISNE340	Data Centric Application Development	3(3-0-6)
269360	ISNE360	Platform Programming	3(3-0-6)
269400	ISNE400	Advanced Information Systems and Network Technology	3(3-0-6)
269430	ISNE430	Wireless and Broadband Computer Networks	3(3-0-6)
269491	ISNE491	Project Survey	1(0-3-0)
269492	ISNE492	Project	3(0-9-0)

### Technology and Software Methods

261200	CPE200	Object-Oriented Programming	3(2-3-4)
261205	CPE205	Data Structures and Algorithms	3(3-0-6)
261361	CPE361	Software Engineering	3(3-0-6)
269102	ISNE102	Basic Computer Programming for Information Systems and Network Engineering	3(1-6-2)
269202	ISNE202	Algorithms for Information Systems and Network Engineering	3(3-0-6)
269210	ISNE210	Computer Architecture for Information Systems and Network Engineering	3(3-0-6)

### Basic Structure of the Systems

261335	CPE335	Computer Networks	3(3-0-6)
261336	CPE336	Computer Networks Laboratory	1(0-3-0)
261342	CPE342	Fundamentals of Database Systems	3(3-0-6)
261343	CPE343	Database System Laboratory	1(0-3-0)
261433	CPE433	Network Programming	3(3-0-6)
261434	CPE434	Computer Network Design and Management	3(3-0-6)
261447	CPE447	Network and Information Security	3(3-0-6)
269130	ISNE130	Fundamentals of Data and Computer Communications	3(3-0-6)

### Hardware and Computer Architecture

261305	CPE305	Operating Systems	3(3-0-6)
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#### 2.2.1.2 Cooperative Education

77 credits

#### The same as normal plan but one additional course

#### Field Experience Training

269495	ISNE495	Cooperative Education	6 credits
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#### 2.2.2 Major Electives

2.2.2.1 Normal a minimum of 12 credits

2.2.2.2 Cooperative Education a minimum of 6 credits

#### Select from the Followings

261411	CPE411	Parallel Processing and Distributed Systems	3(3-0-6)
261430	CPE430	Wireless Networks	3(3-0-6)
261435	CPE435	Broadband Communication Networks	3(3-0-6)
261438	CPE438	Fundamentals of Multiprotocol Label Switching	3(3-0-6)
261444	CPE444	Advanced Database Systems	3(3-0-6)
261448	CPE448	Data Mining for Computer Engineering	3(3-0-6)
261453	CPE453	Digital Image Processing	3(3-0-6)
261456	CPE456	Introduction to Computational Intelligence for Computer Engineering	3(3-0-6)

261461	CPE461	Visual and Interactive Programming	3(3-0-6)
261465	CPE465	Computer Graphics	3(3-0-6)
261468	CPE468	System Analysis and Design for Computer Engineering	3(3-0-6)
261472	CPE472	Robotics	3(3-0-6)
261473	CPE473	Computer-Aided Manufacturing	3(3-0-6)
261475	CPE475	Modeling and Optimization for Big Data Analytics	3(3-0-6)
261476	CPE476	Biomedical Instruments	3(3-0-6)
269341	ISNE341	Data Warehousing and Business Intelligence for Information Systems and Network Engineering	3(3-0-6)
269421	ISNE421	Computer Network Traffic Analysis	3(3-0-6)
269431	ISNE431	Wireless Sensor Network	3(3-0-6)
269432	ISNE432	Peer-to-peer Systems	3(3-0-6)
269451	ISNE451	Introduction to Neuro-Fuzzy Systems	3(3-0-6)
269452	ISNE452	Mobile Application Development	3(3-0-6)
269461	ISNE461	Personal Software Process Improvement	3(3-0-6)
269462	ISNE462	Introduction to Human-Computer Interaction	3(3-0-6)
269471	ISNE471	Advanced Project Management for Information System and Network Engineering	3(3-0-6)
269472	ISNE472	Risk Management in Software Project	3(3-0-6)
269493	ISNE493	Seminar	3(3-0-6)
269494	ISNE494	Selected Topics in Information Systems and Network Engineering	3(3-0-6)
269496	ISNE496	Selected Topics in Information Systems 1	3(3-0-6)
269497	ISNE497	Selected Topics in Information Systems 2	3(3-0-6)
269498	ISNE498	Selected Topics in Network Engineering 1	3(3-0-6)
269499	ISNE499	Selected Topics in Network Engineering 2	3(3-0-6)

#### Field Experience Training

269401	ISNE401	Information System and Network Engineering Training	3(0-18-0)
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### 2.3 Minor (if any)

**a minimum of 15 credits**

According to Chiang Mai University's regulations on minor curricula, if students choose to have a minor degree at Chiang Mai University, they can register for courses with at least 15 credits, conditional on their academic advisor's approval. Hence, the total credits for the whole curriculum increases by at least 15 credits.

### 3) Free Elective

**a minimum of 6 credits**

Any courses can be selected with the approval of the student's academic advisor.