Code :
Bachelor of Engineering Program in Information Systems and Network Engineering (International Program) (2561)

Name of the degree

Full : Bachelor of Engineering (Information Systems and Network Engineering)
Abbreviation : B.Eng. (Information Systems and Network Engineering)

Curriculum structure

1. General Education				**30**
1.1 Language and Communication				**12**
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)
1.2 Humanities and Social Sciences				**9**

Select 3 subjects from

009103	LS	103	Information Literacy and Information Presentation	3(3-0-6)
011100	PHIL	100	Man and Philosophy	3(3-0-6)
011151	PHIL	151	Reasoning	3(3-0-6)
011152	PHIL	152	Ethics for Good Quality of Life	3(3-0-6)
013110	PSY	110	Psychology and Daily Life	3(3-0-6)
050106	HUGE	106	Humanistic Arts	3(3-0-6)
154104	GEO	104	Environmental Conservation	3(3-0-6)
159100	SA	100	Modern World in Everyday Life	3(3-0-6)
176100	LAGE	100	Law and Modern World	3(3-0-6)
701103	ACC	103	General Accounting	3(3-0-6)
703103	MGMT	103	Introduction to Entrepreneurship and Business	3(3-0-6)
751100	ECON	100	Economics for Everyday Life	3(3-0-6)
851100	MC	100	Introduction to Communication	3(3-0-6)

1.3 Science and Mathematics				**6**

Select 2 subjects from

201100	SC	100	Integrated Science	3(3-0-6)
201114	SC	114	Environmental Science in Today's World	3(3-0-6)
201116	SC	116	Science and Global Warming	3(3-0-6)
207109	PHYS	109	Life and the Universe	3(3-0-6)
207110	PHYS	110	Physics : the Science that Changed the World	3(3-0-6)
208101	STAT	101	Statistics for Everyday Life and Work	3(2-2-5)
362211	CONS	211	Principles of Conservation	3(3-0-6)
400110	AGRI	110	Technology Development and Global Change	3(3-0-6)
462130	PHPC	130	Medications in Everyday Life	3(3-0-6)
602102	BIOT	102	Life and Alternative Energy	3(3-0-6)

951100	ANI	100	Modern Life and Animation	3(3-0-6)
953111	SE	111	Software for Everyday Life	3(3-0-6)

1.4 Learning Through Activities — **3**

259191	ENGR	191	Learning through Activities 1	1(0-3-1)
259192	ENGR	192	Learning through Activities 2	1(0-3-1)
259194	ENGR	194	Learning through Activities 4	1(0-3-1)

2. Field of Specialization : a minimum of — **107**

2.1 Core Courses — **24**

Mathematics and Statistics for Information Technicians

206161	MATH	161	Calculus for Engineering 1	3(3-0-6)
206162	MATH	162	Calculus for Engineering 2	3(3-0-6)
255201	IE	201	Quantitative Analysis in Industrial Engineering	3(3-0-6)

Fundamental of Information Technology

269101	ISNE	101	Introduction to Information Systems and Network Engineering	3(3-0-6)
269103	ISNE	103	Programming for Information Systems and Network Engineering	3(3-0-6)

Others

207105	PHYS	105	Physics for Engineering and Agro-Industry Students 1	3(3-0-6)
252281	EE	281	Fundamentals of Electronic Circuits for Information Systems and Network Engineering	3(3-0-6)
259104	ENGR	104	Engineering Drawing	3(2-3-4)

2.2 Major : a minimum of — **83**

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 Requirements

2.2.1.1 Normal — **71**

Organizations and Informaion Systems

261446	CPE	446	Information Systems	3(3-0-6)
269105	ISNE	105	Information Systems and Network Engineering Laboratory 1	1(0-3-0)
269201	ISNE	201	Information Systems and Network Engineering Laboratory 2	1(0-3-0)
269370	ISNE	370	Project Management for Information Systems and Network Engineering	3(3-0-6)
269470	ISNE	470	Information Technology Service Management	3(3-0-6)

Technology for Application

269200	ISNE	200	Web Programming Language	3(2-3-4)
269340	ISNE	340	Data Centric Application Development	3(3-0-6)
269360	ISNE	360	Platform Programming	3(3-0-6)
269400	ISNE	400	Advanced Information Systems and Network Technology	3(3-0-6)
269430	ISNE	430	Wireless And Broadband Computer Networks	3(3-0-6)
269491	ISNE	491	Project Survey	1(0-3-0)
269492	ISNE	492	Project	3(0-9-0)

Technology and Software Methods

261200	CPE	200	Object-Oriented Programming	3(2-3-4)
261205	CPE	205	Data Structures and Algorithms	3(3-0-6)
261361	CPE	361	Software Engineering	3(3-0-6)
269102	ISNE	102	Basic Computer Programming for Information Systems and Network Engineering	3(1-6-2)
269202	ISNE	202	Algorthms for Information Systems and Network Engineering	3(3-0-6)
269210	ISNE	210	Computer Architecture for Information Systems and Network Engineering	3(3-0-6)

Basic Structure of the Systems

261335	CPE	335	Computer Networks	3(3-0-6)

261336	CPE	336	Computer Networks Laboratory	1(0-3-0)
261342	CPE	342	Fundamentals of Database Systems	3(3-0-6)
261343	CPE	343	Database System Laboratory	1(0-3-0)
261433	CPE	433	Network Programming	3(3-0-6)
261434	CPE	434	Computer Network Design and Management	3(3-0-6)
261447	CPE	447	Network and Information Security	3(3-0-6)
269130	ISNE	130	Fundamentals of Data and Computer Communications for Information Systems and Network Engineering	3(3-0-6)

Hardware and Computer Architecture

261305	CPE	305	Operating Systems	3(3-0-6)

2.2.1.2 Cooperative Education **77**

Organizations and Informaion Systems

261446	CPE	446	Information Systems	3(3-0-6)
269105	ISNE	105	Information Systems and Network Engineering Laboratory 1	1(0-3-0)
269201	ISNE	201	Information Systems and Network Engineering Laboratory 2	1(0-3-0)
269370	ISNE	370	Project Management for Information Systems and Network Engineering	3(3-0-6)
269470	ISNE	470	Information Technology Service Management	3(3-0-6)

Technology for Application

269200	ISNE	200	Web Programming Language	3(2-3-4)
269340	ISNE	340	Data Centric Application Development	3(3-0-6)
269360	ISNE	360	Platform Programming	3(3-0-6)
269400	ISNE	400	Advanced Information Systems and Network Technology	3(3-0-6)
269430	ISNE	430	Wireless And Broadband Computer Networks	3(3-0-6)
269491	ISNE	491	Project Survey	1(0-3-0)
269492	ISNE	492	Project	3(0-9-0)

Technology and Software Methods

261200	CPE	200	Object-Oriented Programming	3(2-3-4)
261205	CPE	205	Data Structures and Algorithms	3(3-0-6)
261361	CPE	361	Software Engineering	3(3-0-6)
269102	ISNE	102	Basic Computer Programming for Information Systems and Network Engineering	3(1-6-2)
269202	ISNE	202	Algorthms for Information Systems and Network Engineering	3(3-0-6)
269210	ISNE	210	Computer Architecture for Information Systems and Network Engineering	3(3-0-6)

Basic Structure of the Systems

261335	CPE	335	Computer Networks	3(3-0-6)
261336	CPE	336	Computer Networks Laboratory	1(0-3-0)
261342	CPE	342	Fundamentals of Database Systems	3(3-0-6)
261343	CPE	343	Database System Laboratory	1(0-3-0)
261433	CPE	433	Network Programming	3(3-0-6)
261434	CPE	434	Computer Network Design and Management	3(3-0-6)
261447	CPE	447	Network and Information Security	3(3-0-6)
269130	ISNE	130	Fundamentals of Data and Computer Communications for Information Systems and Network Engineering	3(3-0-6)

Hardware and Computer Architecture

261305	CPE	305	Operating Systems	3(3-0-6)

Field Experience Training

269495	ISNE	495	Cooperative Education	6

2.2.2 Major Electives

2.2.2.1 Normal : a minimum of **12**

2.2.2.2 Cooperative Education : a minimum of **6**

Select From the Followings

261411	CPE	411	Parallel Processing and Distributed Systems	3(3-0-6)
261430	CPE	430	Wireless Networks	3(3-0-6)
261435	CPE	435	Broadband Communication Networks	3(3-0-6)
261438	CPE	438	Fundamentals of Multiprotocol Label Switching	3(3-0-6)
261444	CPE	444	Advanced Database Systems	3(3-0-6)
261448	CPE	448	Data Mining for Computer Engineering	3(3-0-6)
261453	CPE	453	Digital Image Processing	3(3-0-6)
261456	CPE	456	Introduction to Computational Intelligence for Computer Engineering	3(3-0-6)
261461	CPE	461	Visual and Interactive Programming	3(3-0-6)
261465	CPE	465	Computer Graphics	3(3-0-6)
261468	CPE	468	System Analysis and Design for Computer Engineering	3(3-0-6)
261472	CPE	472	Robotics	3(3-0-6)
261473	CPE	473	Computer - Aided Manufacturing	3(3-0-6)
261476	CPE	476	Biomedical Instruments	3(3-0-6)
269341	ISNE	341	Data Warehousing and Business Intelligence for Information Systems and Network Engineering	3(3-0-6)
269421	ISNE	421	Computer Network Traffic Analysis	3(3-0-6)
269431	ISNE	431	Wireless Sensor Network	3(3-0-6)
269432	ISNE	432	Peer-to-Peer Systems	3(3-0-6)
269451	ISNE	451	Introduction to Neuro-Fuzzy Systems	3(3-0-6)
269452	ISNE	452	Mobile Application Development	3(3-0-6)
269461	ISNE	461	Personal Software Process Improvement	3(3-0-6)
269462	ISNE	462	Introduction to Human-Computer Interaction	3(3-0-6)
269471	ISNE	471	Advanced Project Management for Information System and Network Engineering	3(3-0-6)
269472	ISNE	472	Risk Management in Software Project	3(3-0-6)
269493	ISNE	493	Seminar	3(3-0-6)
269494	ISNE	494	Selected Topics in Information Systems and Network Engineering	3(3-0-6)
269496	ISNE	496	Selected Topics in Information Systems 1	3(3-0-6)
269497	ISNE	497	Selected Topics in Information Systems 2	3(3-0-6)
269498	ISNE	498	Selected Topics in Network Engineering 1	3(3-0-6)
269499	ISNE	499	Selected Topics in Network Engineering 2	3(3-0-6)

Field Experience Training

269401	ISNE	401	Information System and Network Engineering Training	3(0-18-0)

2.3 Minor (If any) : a minimum of **15**

According to the Chiang Mai University regulation on the Minor curriculum for the Chiang Mai University student, if students choose to have a minor degree in a curriculum at the Chiang Mai university , they can register those courses not less than 15 credits with the academic advisor's approval. Hence, the total credits for the whole curriculum is increased at least 15 credits.

3. Free Electives : a minimum of **6**

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

Total : a minimum of **143**

Study plan

First Year

First Semester

Code	Dept	No.	Course	Credits
001101	ENGL	101	Fundamental English 1	3(3-0-6)
206161	MATH	161	Calculus for Engineering 1	3(3-0-6)
207105	PHYS	105	Physics for Engineering and Agro-Industry Students 1	3(3-0-6)
259104	ENGR	104	Engineering Drawing	3(2-3-4)
259191	ENGR	191	Learning through Activities 1	1(0-3-1)
269101	ISNE	101	Introduction to Information Systems and Network Engineering	3(3-0-6)
269102	ISNE	102	Basic Computer Programming for Information Systems and Network Engineering	3(1-6-2)
			Total	**19**

Second Semester

Code	Dept	No.	Course	Credits
001102	ENGL	102	Fundamental English 2	3(3-0-6)
206162	MATH	162	Calculus for Engineering 2	3(3-0-6)
261205	CPE	205	Data Structures and Algorithms	3(3-0-6)
269103	ISNE	103	Programming for Information Systems and Network Engineering	3(3-0-6)
269105	ISNE	105	Information Systems and Network Engineering Laboratory 1	1(0-3-0)
269130	ISNE	130	Fundamentals of Data and Computer Communications for Information Systems and Network Engineering	3(3-0-6)
			Science and Mathematics or Humanities and Social Sciences Elective	3
			Total	**19**

Second Year

First Semester

Code	Dept	No.	Course	Credits
001201	ENGL	201	Critical Reading and Effective Writing	3(3-0-6)
261200	CPE	200	Object-Oriented Programming	3(2-3-4)
255201	IE	201	Quantitative Analysis in Industrial Engineering	3(3-0-6)
261335	CPE	335	Computer Networks	3(3-0-6)
261336	CPE	336	Computer Networks Laboratory	1(0-3-0)
269200	ISNE	200	Web Programming Language	3(2-3-4)
269201	ISNE	201	Information Systems and Network Engineering Laboratory 2	1(0-3-0)
269202	ISNE	202	Algorthms for Information Systems and Network Engineering	3(3-0-6)
			Total	**20**

Second Semester

Code	Dept	No.	Course	Credits
001225	ENGL	225	English in Science and Technology Context	3(3-0-6)
252281	EE	281	Fundamentals of Electronic Circuits for Information Systems and Network Engineering	3(3-0-6)
261342	CPE	342	Fundamentals of Database Systems	3(3-0-6)
261343	CPE	343	Database System Laboratory	1(0-3-0)
261433	CPE	433	Network Programming	3(3-0-6)
269210	ISNE	210	Computer Architecture for Information Systems and Network Engineering	3(3-0-6)
			Science and Mathematics or Humanities and Social Sciences Elective	3

| | | | | Total | **19** |

Normal

Third Year

			First Semester	**Credits**
261305	CPE	305	Operating Systems	3(3-0-6)
261434	CPE	434	Computer Network Design and Management	3(3-0-6)
261361	CPE	361	Software Engineering	3(3-0-6)
269340	ISNE	340	Data Centric Application Development	3(3-0-6)
			Science and Mathematics or Humanities and Social Sciences Elective	6
			Total	**18**

			Second Semester	**Credits**
259194	ENGR	194	Learning through Activities 4	1(0-3-1)
261446	CPE	446	Information Systems	3(3-0-6)
261447	CPE	447	Network and Information Security	3(3-0-6)
269360	ISNE	360	Platform Programming	3(3-0-6)
269370	ISNE	370	Project Management for Information Systems and Network Engineering	3(3-0-6)
			Major Elective	3
			Science and Mathematics or Humanities and Social Sciences Elective	3
			Free Elective	3
			Total	**22**

Fourth Year

			First Semester	**Credits**
269400	ISNE	400	Advanced Information Systems and Network Technology	3(3-0-6)
269430	ISNE	430	Wireless And Broadband Computer Networks	3(3-0-6)
269470	ISNE	470	Information Technology Service Management	3(3-0-6)
269491	ISNE	491	Project Survey	1(0-3-0)
			Major Electives	6
			Total	**16**

			Second Semester	**Credits**
259192	ENGR	192	Learning through Activities 2	1(0-3-1)
269492	ISNE	492	Project	3(0-9-0)
			Major Electives	3
			Free Elective	3
			Total	**10**

Cooperative Education

Third Year

			First Semester	**Credits**
261305	CPE	305	Operating Systems	3(3-0-6)
261434	CPE	434	Computer Network Design and Management	3(3-0-6)
261361	CPE	361	Software Engineering	3(3-0-6)
269340	ISNE	340	Data Centric Application Development	3(3-0-6)
			Science and Mathematics or Humanities and Social Sciences Elective	6
			Free Elective	3

				Total **21**

			Second Semester	**Credits**
259194	ENGR	194	Learning through Activities 4	1(0-3-1)
261446	CPE	446	Information Systems	3(3-0-6)
261447	CPE	447	Network and Information Security	3(3-0-6)
269360	ISNE	360	Platform Programming	3(3-0-6)
269370	ISNE	370	Project Management for Information Systems and Network Engineering	3(3-0-6)
269491	ISNE	491	Project Survey	1(0-3-0)
			Major Elective	3
			Free Elective	3
			Total	**20**

Fourth Year

			First Semester	**Credits**
259192	ENGR	192	Learning through Activities 2	1(0-3-1)
269400	ISNE	400	Advanced Information Systems and Network Technology	3(3-0-6)
269430	ISNE	430	Wireless And Broadband Computer Networks	3(3-0-6)
269470	ISNE	470	Information Technology Service Management	3(3-0-6)
269492	ISNE	492	Project	3(0-9-0)
			Major Elective	3
			Science and Mathematics or Humanities and Social Sciences Elective	3
			Total	**19**

			Second Semester	**Credits**
269495	ISNE	495	Cooperative Education	6
			Total	**6**