

**Bachelor Degree in Information Systems and Network Engineering  
(International Program)  
Chiang Mai University**

**Course Structure**

<b>Total</b>	<b>a minimum of</b>	<b>143</b>	<b>credits</b>
<i>General education</i>			
Language and communication		30	<i>credits</i>
Humanities and social sciences		12	credits
Science and mathematics		9	credits
Learning through activities		6	credits
		3	credits
<i>Field of specialization</i>			
	<i>a minimum of</i>	<i>107</i>	<i>credits</i>
Core course		24	credits
Major			
Normal program		71	credits
Cooperative study program		77	credits
Major electives			
Normal program		12	credits
Cooperative study program		6	credits

## Study Plan

<b>1<sup>st</sup> Year, 1<sup>st</sup> Semester</b>				<b>Credits</b>
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 ISNE	3(3-0-6)
269102	ISNE	102	Basic Computer Programming for ISNE	3(1-6-2)
<b>Total</b>				<b>19</b>

<b>1<sup>st</sup> Year, 2<sup>nd</sup> Semester</b>				<b>Credits</b>
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 ISNE	3(3-0-6)
269105	ISNE	105	ISNE Laboratory 1	1(0-3-0)
269130	ISNE	130	Fundamentals of Data and Computer Communications for ISNE	3(3-0-6)
Science and Mathematics or Humanities and Social Sciences Elective				3
<b>Total</b>				<b>19</b>

<b>2<sup>nd</sup> Year, 1<sup>st</sup> Semester</b>				<b>Credits</b>
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	ISNE Laboratory 2	1(0-3-0)
269202	ISNE	202	Algorithms for ISNE	3(3-0-6)
<b>Total</b>				<b>20</b>

<b>2<sup>nd</sup> Year, 2<sup>nd</sup> Semester</b>				<b>Credits</b>
001225	ENGL	225	English in Science and Technology Context	3(3-0-6)
252281	EE	281	Fundamentals of Electronics Circuits for ISNE	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 ISNE	3(3-0-6)
Science and Mathematics or Humanities and Social Sciences Elective				3
<b>Total</b>				<b>19</b>

<b>3<sup>rd</sup> Year, 1<sup>st</sup> Semester (Normal Program)</b>				<b>Credits</b>
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
<b>Total</b>				<b>18</b>

<b>3<sup>rd</sup> Year, 2<sup>nd</sup> Semester (Normal Program)</b>				<b>Credits</b>
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 ISNE	3(3-0-6)
Major Elective				3
Science and Mathematics or Humanities and Social Sciences Elective				3
Free Elective				3
<b>Total</b>				<b>22</b>

<b>4<sup>th</sup> Year, 1<sup>st</sup> Semester (Normal Program)</b>				<b>Credits</b>
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
<b>Total</b>				<b>16</b>

<b>4<sup>th</sup> year, 2<sup>nd</sup> Semester (Normal Program)</b>				<b>Credits</b>
259192	ENGR	192	Learning through Activities 2	1(0-3-1)
269492	ISNE	492	Project	3(0-9-0)
Major Elective				3
Free Elective				3
<b>Total</b>				<b>10</b>

<b>3<sup>rd</sup> Year, 1<sup>st</sup> Semester (Cooperative Study Program)</b>				<b>Credits</b>
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
<b>Total</b>				<b>21</b>

<b>3<sup>rd</sup> Year, 2<sup>nd</sup> Semester (Cooperative Study Program)</b>				<b>Credits</b>
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 ISNE	3(3-0-6)
269491	ISNE	491	Project Survey	1(0-3-0)
Major Elective				3
Free Elective				3
<b>Total</b>				<b>20</b>

<b>4<sup>th</sup> Year, 1<sup>st</sup> Semester (Cooperative Study Program)</b>				<b>Credits</b>
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
<b>Total</b>				<b>19</b>

<b>4<sup>th</sup> year, 2<sup>nd</sup> Semester (Cooperative Study Program)</b>				<b>Credits</b>
269495	ISNE	495	Cooperative Education	6
<b>Total</b>				<b>6</b>

## Course Information

<b>Language and Commination</b>				<b>12 Credits</b>
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)

<b>Humanities and Social Sciences</b>				<b>9 Credits</b>
<i>Select 3 subjects from</i>				
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	Ethetics 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)

<b>Science and Mathematics</b>				<b>6 Credits</b>
<i>Select 2 subjects from</i>				
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(3-0-6)
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)

<b>Learning Through Activities</b>				<b>3 Credits</b>
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)

**Core Courses** **24 Credits****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 Electronics Circuits for Information Systems and Network Engineering	3(3-0-6)
259104	ENGR	104	Engineering Drawing	3(2-3-4)

**Major Courses** **83 Credits****Organizations and Information 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	Algorithms 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	3(3-0-6)

**Hardware and Computer Architecture**

261305	CPE	305	Operating Systems	3(3-0-6)
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**Field Experience Training**

269495	ISNE	495	Cooperative Education	6 Credits
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**Major Electives**

261411	CPE	411	Parallel Processing and Distributed Systems	3(3-0-6)
261430	CPE	430	Wireless Network	3(3-0-6)
261435	CPE	435	Broadband Communication Networks	3(3-0-6)
261438	CPE	438	Fundamental 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)