3(3-0-6)

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1(0-3-1)



CMUMIS Curriculum : หลักสูตร 1/2564

#### Code:

### **Bachelor of Engineering Program in Information Systems and Network Engineering (International Program) (2561)**

## Name of the degree

852100

1.3 Active Citizen

140104

259191

DF

PG

**ENGR** 

100

104

191

Introduction to Film

Principle of Being Professional

Citizenship

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

I. General Edu	cation			30
Required Cou	rses			23
I.1 Learner per	son			15
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	t be selected	from the	following courses	
204100	CS	100	Information Technology and Modern Life	3(3-0-6
261111	CPE	111	Internet and Online Community	3(3-0-6
953111	SE	111	Software for Everyday Life	3(3-0-6
.2 Innovative ( 259192	Co-creator ENGR	192	Skills for Professionalism and Entrepreneurship	<b>4</b> 1(0-3-1
			following courses	
013110	PSY	110	Psychology and Daily Life	3(3-0-6
050106	HUGE	106	Humanistic Arts	3(3-0-6
176100	LAGE	100	Law and Modern World	3(3-0-6
201114	SC	114	Environmental Science in Today's World	3(3-0-6
201117	SC	117	Mathematics and Science in Civilization	3(3-0-6
201190	SC	190	Critical Thinking, Problem Solving and Science Communication	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
259194	ENGR	194	Characteristics and Values for Being a Professional Entrepreneur	1(0-3-1
368100	ABM	100	Starting an Agribusiness in a Changing World	3(3-0-6
602201	BIOT	201	Agro-Industrial Vision	1(0-3-0
610111	AG	111	Packaging for Marketing	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
	MC	103	Life and Society through Media	3(3-0-6
851103	IVIO			-(

- GE Electives 7

A student also chooses at least 6 credits from these 2 groups of GE courses.

Learner Person				
009103	LS	103	Information Literacy and Information Presentation	3(3-0-6)
154100	GEO	100	Introduction to Geography	3(3-0-6)
201100	SC	100	Integrated Science	3(3-0-6)
203100	CHEM	100	Chemistry in Everyday Life	3(3-0-6)
211100	ВСТ	100	Eating Well : Better Living and Disease Prevention	3(3-0-6)
462130	PHPC	130	Medications in Everyday Life	3(3-0-6)
571116	NGGE	116	Health and Working in the Digital Age	3(3-0-6)
701181	ACC	181	Accounting for Non Accountants	3(3-0-6)
702101	FINA	101	Finance for Daily Life	3(3-0-6)
705191	MKTG	191	Smart Consumer	1(1-0-2)
Active Citizen				
109114	FAGE	114	Art in Everyday Life	3(3-0-6)
127100	GOV	100	Politics in Everyday Life	3(3-0-6)
128100	PA	100	Basic Good Governance in Administration	3(3-0-6)
154104	GEO	104	Environmental Conservation	3(3-0-6)
256131	MN	131	Urban Mining	3(3-0-6)
259193	ENGR	193	Morality and Intelligence for Being a Professional	1(0-3-1)
259195	ENGR	195	Managing Activities for Development	1(0-3-1)
801100	ARCT	100	Architecture in Everyday Life	3(3-0-6)
951100	ANI	100	Modern Life and Animation	3(3-0-6)
2. Field of Specia	alization : a	minimu	m of	107
2.1 Core Courses	S			24
Mathematics and	l Statistics f	or Infor	mation 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			•	
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)
252261	ENGR	104	Engineering Drawing	3(2-3-4)
200 IU <del>T</del>	-11011	107	Engineering Diawing	J(Z-J-4)

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 R	equ	uire	me	nts
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2.2.1.1 Normal				71		
Organizations a	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 269200	Application 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 261200	d Software Me	ethods 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 Syste	ms		
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 0	CPE	hitectu 305	re Operating Systems	3(3-0-6)
				77
2.2.1.2 Coopera	tive Education	on		
2.2.1.2 Coopera Organizations a			ems	
			Information Systems	3(3-0-6)
Organizations a	and Informaio	n Syste		3(3-0-6) 1(0-3-0)
Organizations a	and Information	on Syste 446	Information Systems	
Organizations a 261446 269105	nd Information CPE ISNE	on Syste 446 105	Information Systems Information Systems and Network Engineering Laboratory 1	1(0-3-0)
Organizations a 261446 269105 269201	Ind Information CPE ISNE ISNE	on Syste 446 105 201	Information Systems Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2	1(0-3-0)
Organizations a 261446 269105 269201 269370	ISNE ISNE ISNE ISNE ISNE	on Syste 446 105 201 370	Information Systems Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering	1(0-3-0) 1(0-3-0) 3(3-0-6)
Organizations a	ISNE ISNE ISNE ISNE Application	201 370 470	Information Systems Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering Information Technology Service Management	1(0-3-0) 1(0-3-0) 3(3-0-6) 3(3-0-6)
Organizations a	ISNE ISNE ISNE ISNE ISNE ISNE ISNE ISNE	201 370 470	Information Systems Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering Information Technology Service Management Web Programming Language	1(0-3-0) 1(0-3-0) 3(3-0-6) 3(3-0-6) 3(2-3-4)
Organizations a	ISNE ISNE ISNE ISNE ISNE ISNE ISNE ISNE	200 200 340	Information Systems Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering Information Technology Service Management  Web Programming Language Data Centric Application Development	1(0-3-0) 1(0-3-0) 3(3-0-6) 3(3-0-6) 3(2-3-4) 3(3-0-6)
269105 269201 269370 269470 Technology for 269200 269340 269360	ISNE ISNE ISNE ISNE ISNE ISNE ISNE ISNE	201 370 470 200 340 360	Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering Information Technology Service Management  Web Programming Language  Data Centric Application Development  Platform Programming	1(0-3-0) 1(0-3-0) 3(3-0-6) 3(3-0-6) 3(2-3-4) 3(3-0-6) 3(3-0-6)
Organizations a 261446 269105 269201 269370 269470 Technology for 269200 269340 269360 269400	ISNE ISNE ISNE ISNE ISNE ISNE ISNE ISNE	201 370 470 200 340 360 400	Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering Information Technology Service Management  Web Programming Language Data Centric Application Development Platform Programming Advanced Information Systems and Network Technology	1(0-3-0) 1(0-3-0) 3(3-0-6) 3(3-0-6) 3(2-3-4) 3(3-0-6) 3(3-0-6) 3(3-0-6)
269105 269201 269370 269470  Technology for 269340 269360 269400 269430	ISNE ISNE ISNE ISNE ISNE ISNE ISNE ISNE	201 370 470 200 340 360 400 430	Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering Information Technology Service Management  Web Programming Language Data Centric Application Development  Platform Programming Advanced Information Systems and Network Technology  Wireless And Broadband Computer Networks	1(0-3-0) 1(0-3-0) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6)
Organizations a 261446 269105 269201 269370 269470  Technology for 269200 269340 269360 269400 269430 269491	ISNE ISNE ISNE ISNE ISNE ISNE ISNE ISNE	200 340 360 400 430 491 492	Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering Information Technology Service Management  Web Programming Language Data Centric Application Development  Platform Programming Advanced Information Systems and Network Technology  Wireless And Broadband Computer Networks  Project Survey	1(0-3-0) 1(0-3-0) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 1(0-3-0)
Organizations a 261446 269105 269201 269370 269470  Technology for 269200 269340 269360 269400 269430 269491 269492	ISNE ISNE ISNE ISNE ISNE ISNE ISNE ISNE	200 340 360 400 430 491 492	Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering Information Technology Service Management  Web Programming Language Data Centric Application Development  Platform Programming Advanced Information Systems and Network Technology  Wireless And Broadband Computer Networks  Project Survey	1(0-3-0) 1(0-3-0) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 1(0-3-0)
Organizations a	ISNE ISNE ISNE ISNE ISNE ISNE ISNE ISNE	201 370 470 200 340 360 400 430 491 492 ethods	Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering Information Technology Service Management  Web Programming Language  Data Centric Application Development  Platform Programming  Advanced Information Systems and Network Technology  Wireless And Broadband Computer Networks  Project Survey  Project	1(0-3-0) 1(0-3-0) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 1(0-3-0) 3(0-9-0)
Organizations a	ISNE ISNE ISNE ISNE ISNE ISNE ISNE ISNE	200 340 360 400 430 491 492 ethods 200	Information Systems and Network Engineering Laboratory 1 Information Systems and Network Engineering Laboratory 2 Project Management for Information Systems and Network Engineering Information Technology Service Management  Web Programming Language Data Centric Application Development Platform Programming Advanced Information Systems and Network Technology Wireless And Broadband Computer Networks Project Survey Project  Object-Oriented Programming	1(0-3-0) 1(0-3-0) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 1(0-3-0) 3(0-9-0)

269202		000	Also allows for Left and Co. O. of any and National English St.	0/0 0 0
260240	ISNE	202	Algorithms for Information Systems and Network Engineering	3(3-0-6)
269210		210	Computer Architecture for Information Systems and Network Engineering	3(3-0-6)
asic Structure 261335	of the Syste	e <b>ms</b> 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
ardware and C	CPE	chitectui 305		3(3-0-6
		305	Operating Systems	3(3-0-0
eld Experienc 269495	e iraining ISNE	495	Cooperative Education	6
2.2 Major Elec	tives			
2.2.1 Normal :		of		12
2.2.2 Coopera			inimum of	6
Select From th				·
Ociect i form ti	ie i oliowings			
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
261438 261441	CPE CPE		Fundamentals of Multiprotocol Label Switching  Internet of Things and Big Data	•
		438		3(3-0-6
261441	CPE	438 441	Internet of Things and Big Data Advanced Database Systems	3(3-0-6
261441 261444	CPE CPE	438 441 444	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering	3(3-0-6 3(3-0-6
261441 261444 261448	CPE CPE CPE	438 441 444 448	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing	3(3-0-6 3(3-0-6 3(3-0-6
261441 261444 261448 261453	CPE CPE CPE	438 441 444 448 453	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering	3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6
261441 261444 261448 261453 261456 261461	CPE CPE CPE CPE	438 441 444 448 453 456 461	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming	3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6
261441 261444 261448 261453 261456	CPE CPE CPE CPE CPE CPE CPE	438 441 444 448 453 456 461 465	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics	3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6
261441 261444 261448 261453 261456 261461 261465 261468	CPE CPE CPE CPE CPE CPE CPE CPE	438 441 444 448 453 456 461 465 468	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering	3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6
261441 261444 261448 261453 261456 261461 261465 261468 261472	CPE	438 441 444 448 453 456 461 465 468 472	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics	3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6
261441 261444 261448 261453 261456 261461 261465 261468 261472 261473	CPE	438 441 444 448 453 456 461 465 468 472 473	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing	3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6 3(3-0-6
261441 261444 261448 261453 261456 261461 261465 261468 261472 261473 261475	CPE	438 441 444 448 453 456 461 465 468 472 473 475	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing  Modeling and Optimization for Big Data Analytics	3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6)
261441 261444 261448 261453 261456 261461 261465 261468 261472 261473 261475 261476	CPE	438 441 444 448 453 456 461 465 468 472 473 475 476	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing  Modeling and Optimization for Big Data Analytics  Biomedical Instruments	3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6)
261441 261444 261448 261453 261456 261461 261465 261468 261472 261473 261475 261476	CPE	438 441 444 448 453 456 461 465 468 472 473 475 476 341	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing  Modeling and Optimization for Big Data Analytics  Biomedical Instruments  Data Warehousing and Business Intelligence for Information Systems and Network Engineering	3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6)
261441 261444 261448 261453 261456 261461 261465 261468 261472 261473 261475 261476	CPE	438 441 444 448 453 456 461 465 468 472 473 475 476	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing  Modeling and Optimization for Big Data Analytics  Biomedical Instruments	3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6)
261441 261444 261448 261453 261456 261461 261465 261468 261472 261473 261475 261476 269341 269421 269431	CPE	438 441 444 448 453 456 461 465 468 472 473 475 476 341 421 431	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing  Modeling and Optimization for Big Data Analytics  Biomedical Instruments  Data Warehousing and Business Intelligence for Information Systems and Network Engineering  Computer Network Traffic Analysis  Wireless Sensor Network	3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6)
261441 261444 261448 261453 261456 261461 261465 261468 261472 261473 261475 261476 269341	CPE	438 441 444 448 453 456 461 465 468 472 473 475 476 341 421	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing  Modeling and Optimization for Big Data Analytics  Biomedical Instruments  Data Warehousing and Business Intelligence for Information Systems and Network Engineering  Computer Network Traffic Analysis  Wireless Sensor Network  Peer-to-Peer Systems	3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6)
261441 261444 261448 261453 261456 261461 261465 261468 261472 261473 261475 261476 269341 269421 269431	CPE	438 441 444 448 453 456 461 465 468 472 473 475 476 341 421 431 432	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing  Modeling and Optimization for Big Data Analytics  Biomedical Instruments  Data Warehousing and Business Intelligence for Information Systems and Network Engineering  Computer Network Traffic Analysis  Wireless Sensor Network	3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6)
261441 261444 261448 261453 261456 261461 261465 261468 261472 261473 261475 261476 269341 269421 269431 269431 269432 269451	CPE	438 441 444 448 453 456 461 465 468 472 473 475 476 341 421 431 432 451 452	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing  Modeling and Optimization for Big Data Analytics  Biomedical Instruments  Data Warehousing and Business Intelligence for Information Systems and Network Engineering  Computer Network Traffic Analysis  Wireless Sensor Network  Peer-to-Peer Systems  Introduction to Neuro-Fuzzy Systems  Mobile Application Development	3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6)
261441 261444 261448 261453 261456 261456 261465 261468 261472 261473 261475 261476 269341 269421 269431 269432 269451 269452 269461	CPE	438 441 444 448 453 456 461 465 468 472 473 475 476 341 421 431 432 451 452 461	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing  Modeling and Optimization for Big Data Analytics  Biomedical Instruments  Data Warehousing and Business Intelligence for Information Systems and Network Engineering  Computer Network Traffic Analysis  Wireless Sensor Network  Peer-to-Peer Systems  Introduction to Neuro-Fuzzy Systems  Mobile Application Development  Personal Software Process Improvement	3(3-0-6) 3(3-0-6)
261441 261444 261448 261453 261456 261461 261465 261468 261472 261473 261475 261476 269341 269421 269431 269431 269432 269451	CPE	438 441 444 448 453 456 461 465 468 472 473 475 476 341 421 431 432 451 452	Internet of Things and Big Data  Advanced Database Systems  Data Mining for Computer Engineering  Digital Image Processing  Introduction to Computational Intelligence for Computer Engineering  Visual and Interactive Programming  Computer Graphics  System Analysis and Design for Computer Engineering  Robotics  Computer - Aided Manufacturing  Modeling and Optimization for Big Data Analytics  Biomedical Instruments  Data Warehousing and Business Intelligence for Information Systems and Network Engineering  Computer Network Traffic Analysis  Wireless Sensor Network  Peer-to-Peer Systems  Introduction to Neuro-Fuzzy Systems  Mobile Application Development	3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6) 3(3-0-6)

2.3 Minor (If any	y) : a minimı	um of		15
269401	ISNE	401	Information System and Network Engineering Training	3(0-18-0)
Field Experience	e Training			
269499	ISNE	499	Selected Topics in Network Engineering 2	3(3-0-6)
269498	ISNE	498	Selected Topics in Network Engineering 1	3(3-0-6)
269497	ISNE	497	Selected Topics in Information Systems 2	3(3-0-6)
269496	ISNE	496	Selected Topics in Information Systems 1	3(3-0-6)
269494	ISNE	494	Selected Topics in Information Systems and Network Engineering	3(3-0-6)
269493	ISNE	493	Seminar	3(3-0-6)

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

143

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

Total : a minimum of

# Study plan

#### First Year

001101	ENGL	101	First Semester Fundamental English 1	<b>Credits</b> 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	Principle of Being Professional	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	<u>19</u>
001102	ENGL	102	Second Semester Fundamental English 2	<b>Credits</b> 3(3-0-6)
140104				, ,
	PG	104	Citizenship	3(3-0-6)
206162	PG MATH	104 162	Citizenship  Calculus for Engineering 2	3(3-0-6)
			·	. ,
206162	MATH	162	Calculus for Engineering 2	3(3-0-6)
206162 261205	MATH CPE	162 205	Calculus for Engineering 2  Data Structures and Algorithms	3(3-0-6) 3(3-0-6)
206162 261205 269103	MATH CPE ISNE	162 205 103	Calculus for Engineering 2  Data Structures and Algorithms  Programming for Information Systems and Network Engineering	3(3-0-6) 3(3-0-6) 3(3-0-6)

### **Second Year**

			<u>First Semester</u>	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	<u>20</u>
	001225	ENGL	225	Second Semester English in Science and Technology Context		<b>Credits</b> 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
				Innovative Co-creator		3
					Total	<u>19</u>
				Normal		
				Normal		
				Third Year		
	261305	CPE	305	First Semester Operating Systems		<b>Credit</b> : 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
	269430	ISNE	430	Wireless And Broadband Computer Networks		3(3-0-6
	204100	CS	100	Information Technology and Modern Life		3(3-0-6
	261111	CPE	111	Internet and Online Community		3(3-0-6
-	953111	SE	111	Software for Everyday Life		3(3-0-6
					Total	<u>18</u>
				Second Semester		Credits
	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
				General Education Electives		1
				Major Elective		3
				Free Elective		3
				Farrish Vacu		
	269491	ISNE	491	Fourth Year Project Survey		1(0-3-0
				Major Electives		6
				General Education Electives		6
				Free Electives		3
					Total	<u>35</u>
	050400	ENIOS	405	Second Semester		Credit
	259192	ENGR	192	Skills for Professionalism and Entrepreneurship		1(0-3-1
	269400	ISNE	400	Advanced Information Systems and Network Technology		3(3-0-6
	269470	ISNE	470	Information Technology Service Management		3(3-0-6
	269492	ISNE	492	Project		3(0-9-0

				Total	<u>13</u>
			Cooperative Education		
			Third Year		
2613	05 CPE	305	First Semester Operating Systems		<b>Credits</b> 3(3-0-6)
2614	34 CPE	434	Computer Network Design and Management		3(3-0-6
2693	40 ISNE	340	Data Centric Application Development		3(3-0-6
2613	61 CPE	361	Software Engineering		3(3-0-6
2694	30 ISNE	430	Wireless And Broadband Computer Networks		3(3-0-6
2041	00 CS	100	Information Technology and Modern Life		3(3-0-6
2611	1 CPE	111	Internet and Online Community		3(3-0-6
9531	I1 SE	111	Software for Everyday Life		3(3-0-6
			Free Elective		3
				Total	<u>21</u>
2614	46 CPE	446	Second Semester Information Systems		<b>Credit</b> : 3(3-0-6
2614	47 CPE	447	Network and Information Security		3(3-0-6
2693	60 ISNE	360	Platform Programming		3(3-0-6
2693	70 ISNE	370	Project Management for Information Systems and Network Engineering		3(3-0-6
2694	91 ISNE	491	Project Survey		1(0-3-0
			General Education Electives		1
			Major Elective		3
			Free Elective		3
				Total	<u>20</u>
			Fourth Year		
			First Semester		Credits
2694	95 ISNE	495	Cooperative Education		6
				Total	<u>6</u>
			Second Semester		Credits
2591	92 ENG	R 192	Skills for Professionalism and Entrepreneurship		1(0-3-1
2694	00 ISNE	400	Advanced Information Systems and Network Technology		3(3-0-6
2694	70 ISNE	470	Information Technology Service Management		3(3-0-6
2694	92 ISNE	492	Project		3(0-9-0
			General Education Electives		6
			Major Elective		3
				Total	<u>19</u>

3

Major Electives