Ming Chuan University Computer Science and Information Engineering Course Outline for all students entering in 2019

						year				d year			Thire	l year			Forth	n year		
	Course	Credits	Hours	Factass	all	Г	ing lab	Fa	all lab		ring	Fa class	all lab	Spr class	ing lab	Fa class	all lab	1	ring lab	Note
	Chinese Literature: Appreciation And Creative Writing 1	2	2	2	140	class	140	class	140	class	140	class	140	class	140	class	140	Class	140	
	Chinese Literature: Appreciation And Creative Writing 22	2	2			2														
	Practical English 1	0	2	1	1															
Core	Practical English 2	0	2			1	1													
Required	Practical English 3	0	2					1	1											
Courses	Practical English 4	0	2							1	1									
	English for Business Communication 1	2	3									2	1							Note7
	English for Business Communication 2	2	3											2	1					
	Workplace English 1 1	2	3													2	1			
	Workplace English 2 2	2	3															2	1	
	Physical Education 1-6	0	12	2		2		2		2		2		2						
	Computer Programming 1	3	6	3	3															Computer course
	Digital Logical Design	3	3	3																
Iı	Introduction to Computer	3	5	3	2															Computer course
	Lab for Digital Logical Design	1	3	3																Lab course
	Calculus 1	3	4	3	1															
	Discrete Mathematics	3	3			3														
	Computer Programming 2	3	6			3	3													Computer course
	Calculus 2	3	4			3	1													
Profession	al Electric Circuits	3	3			3														
Required	Introduction to Computer Networks	3	3					3												
Courses	Data Structures	3	5					3	2											Computer course
	Object-oriented Technology	3	3					3												
	Linear Algebra	3	3							3										
	Computer Algorithms	3	3							3										
	Mobile Device Programming	3	3							3										
	Probability and Statistics	3	4									3	1							
	Operating Systems	3	3									3								
	Database Systems	3	3									3								
	Project Research1	3	3											3						
	Project Research2	3	3								İ					3				
Electiv re a		3	3							3										Comput er course
e Da	Artificial Intelligence	3	3									3								
Course erin	ng Introduction to ogra Programming with Python	3	3							3										
	python																			

				First	year			Secon	d year			Thirc	l year			Forth	rth year Spring class lab		
Course	Credits	Hours	Fa			ing		ull	Spr		Fa		Spr		-	all	_	_	Note
Advanced Java			class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
Programming and Licence JAVA	3	3							3										
Data Mining	3	3							3										
Web Programming WEB	3	3									3								
Introduction to Software Engineering	3	3									3								
Data Warehouse System	3	3									3								
R Language Data Processing R	3	3									3								
Systems Analysis and Design	3	3											3						
UNIX Operations Systems UNIX	3	3											3						
Social Networking Programming	3	3											3						
machine learning	3	3											3						
Business Intelligence	3	3											3						
Weka Practice Data Analysis WEKA	3	3											3						
Linux System Linux	3	3													3				
Social Network Mining	3	3													3				
Software Testing and Maintenance	3	3													3				
Big Data Analysis	3	3													3				
Object-Oriented Design Patterns	3	3													3				
Introduction to Multimedia	3	3					3												
Principle and Application of Sensors	3	3					3												
Unity3D Design Unity3D	3	3					3												
Introduction to Mobile Communication	3	3					3												
Matlab programming and Application Matlab	3	3							3										
TCP/IP Protocol TCP/IP	3	3							3										
Interactive media design	3	3							3							1			
Image processing	3	3									3								
Electronic Interactive Technology Programming	3	3									3								
Introduction to Video Communication	3	3									3								
Introduction to Information Security	3	3									3								
Cloud Computing- Virtualization Technologies	3	3									3								
Technologies of Internet of Things	3	3											3						

					First	t year			Secon	nd year		Third year								
	Course	Credits	Hours	F	all	1 T	ring	Fa	all		ring	Fa		-	ing	Fa	all	year Spi	ring	Note
				class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
	Interactive Video Game Development	3	3											3						
	Embedded Multimedia Design	3	3											3						
	High-speed Networks	3	3											3						
	Topics on Image Processing	3	3											3						
	Virtual Reality	3	3											3						
	Network Planning and Management	3	3													3				
	Network Intrusion Detection	3	3													3				
	Introduction to Neural Network and Deep Learning	3	3													3				
	Military Education 1	0	2	2																
	Military Education 2	0	2			2														
	Nursing Section 1	0	2	2																
	Nursing Section 2	0	2			2														
	Military Education 3	0	2					2												
	Military Education 4	0	2							2										
	Physical Education	2	2													2				
Electiv	Physical Education	2	2															2		
e Course ^{other}	Japanese 1-1	2	3	2	1															
s	Japanese 1-2	2	3			2	1													
	Japanese 2-1	2	3					2	1											
	Japanese 2-2	2	3							2	1									
	Introduction to Civil Law	2	2	2																
	Copyright law	2	2											2						
	Practical English	3	3									3								
	Workplace English	3	3											3						
	computer aided circuit design	3	3					3												Lab course
	Microprocessor Systems	3	3							3										Lab course
Other	Fundamentals of Electronics	3	3	3																
Electiv inform e ational Course Electiv	Overview of Information Technology	1	1	1																
s e Course	Applied Information	3	3			3														
	Windows Programming	3	3			3														
	Assembly Language	3	3							3										
	Engineering Mathematics	3	3							3										
	Introduction to Web Servers	3	3							3										

				First	year			Secon	d year			Thire	l year			Forth	Forth year		
Course	Credits	Hours	Fa	all	Spi	ing	Fa	all	Spr	ing	Fa	all	Spr	ing	Fa	all	Spr	ing	Note
			class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
Information Ethics	2	2									2								
Computer Architectures	3	3									3								
Fuzzy Systems	3	3									3								
Advanced APPs Programming for Mobile Devices	3	3									3								
Embedded Systems and Applications	3	3											3						
Innovative and Creative Project Development	3	3											3						
Formal Language	3	3											3						
Advanced iOS Programming iOS	3	3											3						
Web Page Design and Practical Applications	3	3													3				
Open Source Software Engineering Practice	3	3													3				
Open Source Operating System Practice	3	3													3				
Advanced Programming and Certification	0	3															3		
Practical Data Mining Applications with Open Source Software	3	3															3		
Open Source Network Server Setup Practice	3	3															3		
Advanced Internship	3	3															3		
Practical Project of Electronics	3	3															3		
Advanced CPP Programming CPP	3	3							3										Comput er course
Computer Animation	3	3							3										Comput er
Digital Signal Processing	3	3							3										course
Artificial Intelligence	3	3									3								
Information ethics	2	2									2								
Fuzzy Theory	3	3									3								
Special Topics on Programming	3	3									3								
Introduction to Coding	3	3									3								
The Design and	3	3									3								Lab
Applications of FPGA/CPLD FPGA/CPLD	3	3									3								course
Seminar on the Design of Computer Algorithms	3	3									3								
Cloud technology design and services	3	3									3								

				First year					Secon	d year			Third	l year						
	Course	Credits	Hours	-	all		ring	Fa			ring	Fa			ring	Fa			ring	Note
	Statistics analysis and Application	3	3	class	lab	class	lab	class	lab	class	lab	class	lab	class 3	lab	class	lab	class	lab	
	Unix Programming Unix	3	3											3						Compu er course
	Peripheral Interface Design	3	3											3						Lab course
	Introduction to Secret Sharing	3	3											3						
	Cloud computing Security Management	3	3											3						
	Cloud computing technology and applied	3	3											3						
	Advanced Computer Architectures	3	3													3				
	Distributed Systems	3	3													3				
	Information Laws	3	3													3				
	Social media project develop	3	3													3				
	Performance Analysis	3	3															3		
	Intelligent Computation	3	3															3		
	Digital content and trend	3	3															3		
	iOS Programming iOS	3	3									3								
	The Lectures of Information Trend	2	2													2				
	Internship	3	3													3				
	Overseas Internship	2	2															2		
otot Co	ore Required Courses	12																		
Pr	ofessional Required Courses	58																		
Cr	ofessional Elective Course redits	46																		
G	eneral Education course credits	12																		
gr	aduation credits	128																		

Notes:

Sub

1. The students of CSIE department must fulfill 128 credits to be eligible for graduation, including:

I.24 required credits demanded by the university

II.58 required credits demanded by the department

III.At least 46 elective credits which include:

A.At least one course from each of the two modules (totally 6 credits)

B.At least one of the following two courses: Information Law and Information Ethics.

IV.Pre-requisite policy: The minimum score of 40 for Programming Design II is the pre-requisite for Data Structure and Computer Algorithms

2. Courses from focused course programs set up by any individual IT department or cooperatively between IT and other Schools can be regarded as the CSIE professional elective courses. Courses selected from other Schools can be regarded as the other department credits with a limitation of at most 20 course credits.

3. Students can choose the courses from the CSIE Master program, which can be counted as their graduation credits.

4. If students cannot finish the requirement for graduation owing to the reason that some courses from each of the two programs cannot be delivered, the department chair can assign other courses as substitutions.

5. When retaking the required course, students can choose those which are with the same course name or the same course content as substitutions under the approval of the department chair. These courses can be regarded as their graduation credits.

6. Students need to complete at least 12 General Education course credits. General Education courses are divided into three areas: Humanities, Social Science, and Natural Science. Each area is divided into two subcategories: core and extended. Students need to take 1 two-credit course in both of the subcategories within each area to be eligible for graduation. Only 12 course credits will be counted toward graduation. Additional course credits earned in General Education courses are not counted toward graduation.

7. In accordance with the General Provisions for Study, undergraduate students need to satisfactorily complete Service Learning, meet the university-wide basic competencies of English, Information Technology, Chinese, and Sports, and pass the core competencies of their department to be eligible for graduation.

8. Education credits cannot be counted as the graduation credits.

9. Students who fulfill the requirement of each modules can apply for the corresponding certificate. The requirement of each modules will be specified in the other regulation.

10. The elective courses on this Course Outline may be counted toward total graduation credits by students who entered the university prior to the 2019-7 academic year.

11.focused course program specified in the other regulation, please refer to the CSIE department website.

12. The credits of interdisciplinary focused course program are not included in course structure diagram that can be regarded as the other department credits.