

## Computer Science

### Introduction

In the new millennium and the global era, the role of information and automation in the various domains and activities of the business industry are becoming more important. The successes of the activities are determined by how computer science can support in managing the information. Information must be up-to-date, accurate and comprehensive to allow decision makers to determine the enterprise's strategy. Furthermore, automation can facilitate human activity, accelerate the pace of work and make it more effective and efficient, while also increasing productivity in various activities. The development of communication and computer technology has made it possible to get information that is rapid, exact, and accurate. It also increases the application of automation in various fields such as industry, business, office affairs and development of science and technology.

Computer Science Undergraduate Study Program Bina Nusantara University Malang is one of the Study Programs of School of Computer Science Bina Nusantara University Jakarta. This study program focuses on learning process in the field of computer science with a Sarjana Komputer (S.Kom.) Academic Degree. The learning process is managed within 4 years by the 2 + 1 + 1 Program. The learning process in the first to third semesters is carried out in Malang Campus, East Java. The students then have the opportunity to study at Bina Nusantara Jakarta campus for a year, in the fourth and fifth semesters as part of the Mobility Program. Students also have the opportunity to enrich their learning with various partners of Bina Nusantara University for one year in the sixth and seventh semesters through Enrichment Program. The Enrichment Program offers seven optional tracks: Certified Internship, Certified Entrepreneurship, Certified Research, Certified Community Development, Certified Study Abroad, Certified Specific Independent Study, and Further Study. On the last semester every student takes a thesis as final course and will be guided by Faculty Member at Bina Nusantara University Malang. Computer Science Study Program at Bina Nusantara University @Malang campus emphasizes the processes, techniques, and tools that go into developing computer-based systems.

### Vision

A world class study program by providing excellent educational experiences in computer science, fostering and empowering the society in building and serving the nation through digital technology and technopreneur.

### Mission

The mission of Computer Science Department is to contribute to the global community through the provision of world-class education by:

1. Educating students to effectively apply their educational experiences in computer science to solve real-world problems through digital technology and technopreneur approach.
2. Preparing our graduates to develop exemplary soft skills & technical skills required as ICT professionals, leaders and entrepreneurs in global market.
3. Promoting high impact research that contributes to the nation in digital technology themes.
4. Fostering BINUSIAN as lifelong learners through self-enrichment.
5. Empowering BINUSIAN to continuously improve and society's quality of life through digital technology and technopreneur approach.

### Program Objective

The objectives of the program are:

1. Graduates will become successful professionals in ICT fields;
2. Graduates will obtain employment in global companies or become entrepreneurs;
3. Graduates will obtain professional certification or continue their study to the postgraduate level

## Student Outcomes

After completing the study, graduates are:

1. Able to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions
2. Able to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of computer science
3. Able to communicate effectively in a variety of professional contexts
4. Able to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles
5. Able to function effectively as a member or leader of a team engaged in activities appropriate to computer science
6. Able to apply computer science theory and software development fundamentals to produce computing based solutions

## Prospective Career of the Graduates

After finishing the program, the graduate of Computer Science Program could follow a career as:

1. Analyst
2. Developer
3. Entrepreneur

## Curriculum

The curriculum of the Computer Science Study Program has been developed in line with the National Curriculum. Also, the local content has been developed in line with the Computer Science Curriculum standard of ACM (Association for Computing Machinery), several local and foreign universities, and market trends, so that the graduates of the Computer Science are expected to be able to face competition at both a national and international level.

Generally, the subjects of the curriculum are divided into these following groups of subjects:

### Mathematics Group (Science)

The objective of this group is to provide an understanding of mathematics as one of the principal foundations of computer science. Another objective is to give an understanding of scientific methodology (data collection, hypothesis, research, analysis) in problem solving.

### Character Building Group (Professional Practices)

The objective of this group is to develop the personal strengths of the student and to provide him or her with a professional character, professionalism in their field, management skills, oral and written communication skills, understanding of business ethic, ability to work as a team, and to develop a "Binusian" Character.

### Core Group

The objective of this group is to provide a grounding in Computer Science through practice as well as applied theory which is required by business both now and in the future. The subjects that are included in this group are programming, algorithm design and analysis, software engineering, database systems, computer graphics, multimedia technology, human and computer interaction, operation systems, computer architecture, and computer network.

### Streaming

All campuses of Computer Science Undergraduate Study Program Bina Nusantara University have the same core courses to ensure the main competency standards in Computer Science. However, every student also has the opportunity to enrich into various streaming in the fourth and fifth semesters. There are 12 streaming (specialization) options for students of Computer Science Undergraduate Study Program Bina Nusantara University Malang, namely Digital Creative Technology, Immersive technology, Intelligent System, Database Technology, Network Technology, Network Security, Game Technology, Mobile Technology, Interactive Multimedia, Software Engineering, Data Science, Internet of Things, Mobile and Game Technology, and AI-Driven Development.

### Streaming BINUS @Malang Campus

- **Digital Creative Technology:** Focus on smart software application development based on big data analytics regarding business innovation and digital transformation on Industry 4.0. era (Digital Business Innovation and Transformation).
- **Immersive Technology:** Focus on development of immersive technology-based solutions supported by AR (Augmented Reality), VR (Virtual Reality), and XR (Extended Reality) technologies.

### Streaming BINUS @Greater Jakarta Campus

- **Intelligent System:** Focus on smart software development through complex algorithm based on Artificial Intelligence to solve problem.
- **Database Technology:** Focus on software development through database technology for business operation and business analytics and business intelligent.
- **Network Technology:** Focus on software development on computer network through computer network design and computer network programming.
- **Network Security:** Focus on secure software development through secure computer network design and secure computer network programming.
- **Game Technology:** Focus on interactive software development through game art, game design and game programming for entertainment and business solution.
- **Mobile Technology:** Focus on software development through mobile devices platform.
- **Interactive Multimedia:** Focus in exploring interactive multimedia applications based on computer programming, design tools, and software engine.
- **Software Engineering:** Focus on development of software through software architecture, various methodologies and software engineering equipment.
- **Data Science:** Focus on exploring the latest technologies and various tools in finding solutions and reaching conclusions based on Data.

### Streaming BINUS @Bandung Campus

- **Cloud Technology:** Focus on various techniques for cloud management, especially managing the network and computing services.
- **Internet of Things:** Focus on various techniques and implementation of IoT

### Streaming BINUS @Semarang Campus

- **Mobile and Game Technology:** Focus on mobile and game application development, as well as artificial intelligence.

### Streaming BINUS @Medan Campus

- **AI-Driven Development:** Focus on combines a deep understanding of the concepts and applications of artificial intelligence with the skills to build a digital business based on modern technology

### Course Structure

Sem	Code	Course Name	SCU	Total
1	CHAR6030004	Character Building: Pancasila <sup>(AOL)</sup>	2	20
	MATH6118004	Discrete Mathematics	4	
	MATH6119004	Linear Algebra	2	
	COMP6764004	Basic Statistics	2	
	COMP6360004	Algorithm and Programming <sup>2)</sup> (AOL)	4/2	
	COMP6840004	Program Design Methods <sup>1)</sup> (AOL)	2	
	LANG6117004	Indonesian <sup>(AOL)</sup>	2	
	Foreign Language Courses		0	
2	CHAR6031004	Character Building: Kewarganegaraan <sup>(AOL)</sup>	2	20
	COMP6362004	Data Structures <sup>1), 2)</sup> (AOL)	4/2	
	MATH6120004	Calculus	4	
	MATH6193004	Scientific Computing <sup>(AOL)</sup>	2/1	
	COMP6851004	Human and Computer Interaction <sup>2)</sup> (AOL)	2/1	
	ENPR6315002	Creativity & Innovation <sup>(AOL)</sup>	2	
	Foreign Language Courses		0	
3	CHAR6032004	Character Building: Agama <sup>(AOL)</sup>	2	21
	COMP6365004	Algorithm Design and Analysis <sup>1)</sup> (AOL)	4	
	CPEN6250004	Computer Networks <sup>(AOL)</sup>	2/1	
	SCIE6067004	Computational Physics <sup>(AOL)</sup>	2/1	
	COMP6852004	Database Technology <sup>2)</sup> (AOL)	2/1	
	COMP6853004	Artificial Intelligence <sup>2)</sup> (AOL)	4	
	COMP6854004	Object Oriented Programming <sup>1), 2)</sup>	2	
	Foreign Language Courses		0	
4	COMP6712004	Research Methodology in Computer Science <sup>1)</sup> (AOL)	2	<ul style="list-style-type: none"><li>• Total SCU of Streaming Game Technology, Network Security, Mobile, Data Science, &amp; Cloud Technology: 19</li><li>• Total SCU of Streaming Digital Creative Technology, Immersive Technology, Internet of Things, Intelligent System, Database technology, Interactive Multimedia, Network Technology, Software Engineering, Mobile &amp; Game Technology, AI-Driven Development : 21</li><li>• Total SCU of Minor Program Malang: 19</li><li>• Total SCU of Minor Program Jakarta, Bandung, Semarang Free Electives<sup>5,6)</sup> :17</li></ul>
	SCIE6068004	Computational Biology	2/1	
	COMP6855004	Software Engineering <sup>2)</sup> (AOL)	4	
	COMP6955004	Database Design*	2	
	STREAMING: DIGITAL CREATIVE TECHNOLOGY <sup>4)</sup>			
	COMP6679004	Web Programming <sup>2)</sup>	4	
	COSC6109004	Popular Programming Technology <sup>1)</sup>	4	
	COSC6001004	User Experience	2	
	STREAMING: IMMERSIVE TECHNOLOGY <sup>4)</sup>			
	COSC6002004	User Experience for Digital Immersive Technology	2	
	COSC6003004	Multimedia and 3D Modelling	2/2	
	COSC6004004	3D Web Programming	2/2	
	STREAMING: INTERNET OF THINGS <sup>5)</sup>			
	COMP6849031	Embedded System	2/2	

Sem	Code	Course Name	SCU	Total
	COMP6850031	Multimedia & Mixed Reality	2/1	<ul style="list-style-type: none"><li>• Cumulative SCU of Streaming Game Technology, Network Security, Data Science, Cloud Technology: 80</li><li>• Cumulative SCU of Streaming Digital Creative Technology, Immersive Technology, Internet of Things, Intelligent System, Database technology, Interactive Multimedia, Network Technology, Software Engineering, Mobile and Game Technology, AI-Driven Development : 82</li><li>• Cumulative SCU of Minor Program Malang: 80</li><li>• Cumulative SCU of Minor Program Jakarta, Bandung, Semarang, Free Electives: 78</li></ul>
	MOBI6072031	Mobile Programming	2/1	
	COMP6655031	Cyber Security in IoT	2	
	STREAMING: CLOUD TECHNOLOGY <sup>5)</sup>			
	COMP6988031	Introduction to Cloud Computing	2/2	
	COMP6989031	Web Based Programming	2/2	
	COMP6990031	Introduction to Cloud security	2	
	STREAMING: INTELLIGENT SYSTEM <sup>6)</sup>			
	COMP6885001	Natural Language Processing <sup>1), 2)</sup>	2/2	
	COMP6577001	Machine Learning	4	
	COMP7116001	Computer Vision <sup>1)</sup>	2/2	
	STREAMING: DATABASE TECHNOLOGY <sup>6)</sup>			
	COSC6097001	Data Engineering	2/1	
	COMP6579001	Big Data Processing <sup>1), 2)</sup>	2/2	
	COSC6098001	Data Visualization	2	
	COSC6099001	Data Analytics	2/1	
	STREAMING: INTERACTIVE MULTIMEDIA <sup>6)</sup>			
	COMP8129001	User Experience <sup>1), 2)</sup>	2/2	
	COSC6095001	Multimedia system and Programming Foundation	2/2	
	COSC6096001	Extended Reality	2	
	COMP7128001	Game Design	2	
	STREAMING: NETWORK TECHNOLOGY <sup>6)</sup>			
	COMP6824001	Computer Security <sup>1)</sup>	2/2	
	COMP6584001	Network and System Programming <sup>1), 2)</sup>	2/2	
	COSC6100001	Cloud Infrastructure	2/2	
	STREAMING: SOFTWARE ENGINEERING <sup>6)</sup>			
	COSC6092001	Code Reengineering	2/2	
	COSC6093001	Software Architecture	2/2	
	COSC6094001	Mobile Hybrid Solution <sup>2)</sup>	2/2	
	STREAMING: GAME TECHNOLOGY <sup>6)</sup>			
	GAME6069001	Game Programming <sup>1), 2)</sup>	4	
	GAME6082001	Game Animation <sup>1), 2)</sup>	2	
	COSC6094001	Mobile Hybrid Solution <sup>2)</sup>	2/2	
	STREAMING: DATA SCIENCE <sup>6)</sup>			
	DTSC6013001	Data Mining and Visualization <sup>1), 2)</sup>	2	
	DTSC6011001	Survey and Sampling Methods	2	
	COMP6577001	Machine Learning	4	
	DTSC6003001	Big Data Infrastructure and Technology <sup>1)</sup>	2	
	STREAMING: NETWORK SECURITY <sup>6)</sup>			
	COMP6842001	Server and Network Administration <sup>1), 2)</sup>	2	
	COMP6549001	Software Security <sup>1), 2)</sup>	2	
	COMP6844001	Mobile Penetration Testing <sup>2)</sup>	2/2	

Sem	Code	Course Name	SCU	Total
	LAWS6110001	Cyber Law	2	
	<b>STREAMING: MOBILE AND GAME TECHNOLOGY <sup>7)</sup></b>			
	COMP6897051	Game Design & Programming	2/2	
	COMP6898051	User Experience <sup>2)</sup>	2	
	COMP6899051	Machine Learning	2	
	COMP6900051	Mobile Embedded Systems	4	
	<b>STREAMING: AI-DRIVEN DEVELOPMENT <sup>8)</sup></b>			
	COSC6148060	Machine Learning & Data Mining for Business	4	
	COSC6149060	Cloud Architecture	2	
	COSC6150060	DevOps Engineering	4	
	COSC6151060	Geographic Information System	2	
	<b>Minor Program</b>		8	
	<b>Free Electives <sup>4),6)</sup></b>		8	
	<b>Foreign Language Courses</b>		0	
5	COMP6390004	Compilation Techniques	4	<ul style="list-style-type: none"> <li>• Total SCU of Streaming : Cloud Technology, Game Technology, Data Science, Network Security: 20</li> <li>• Total SCU of Streaming Digital Creative Technology, Immersive Technology, Internet of Things, Intelligent Systems, Database Technology, Interactive Multimedia, Network Technology, Software Engineering, Mobile and Game Technology, AI-Driven Development: 18</li> <li>• Total SCU of Minor Malang: 20</li> <li>• Total SCU of Minor Jakarta,Bandung, Semarang, Free Electives: 22</li> <li>• Cumulative SCU of Streaming : Digital Creative Technology, Immersive Technology, Internet of Things, Intelligent Systems, Database Technology, Interactive Multimedia, Network Technology, Software Engineering, Mobile and Game Technology, AI-Driven Development, Cloud Technology, Game Technology, Data Science, Network Security: 100</li> <li>• Cumulative SCU of Minor Program, Free Electives: 100</li> </ul>
	COMP6713004	Operating System <sup>(AOL)</sup>	2	
	ENPR6316002	Venture Creation <sup>(AOL)</sup>	2	
	<b>STREAMING: DIGITAL CREATIVE TECHNOLOGY <sup>4)</sup></b>			
	COMP6678004	Big Data Analytics for Business	4	
	MOBI6063004	Mobile Application Programming <sup>2)</sup>	4	
	COSC6005004	Agile Software Development	2	
	<b>STREAMING: IMMERSIVE TECHNOLOGY <sup>4)</sup></b>			
	COSC6006004	Augmented Reality Application Programming	2/2	
	COSC6007004	Virtual Reality Application Programming	2/2	
	COSC6008004	Immersive Technology Capstone Project	2	
	<b>STREAMING: INTERNET OF THINGS <sup>5)</sup></b>			
	COMP6757031	Computer vision in IoT	2/2	
	COMP6882031	IoT Development and Architecture	2/2	
		Elective Course	2	
	<b>STREAMING: CLOUD TECHNOLOGY <sup>5)</sup></b>			
	COMP6991031	Cloud Services	2/2	
	COMP6992031	Software Development Operations in Cloud Environments	2	
	COMP6993031	Application Development in Cloud	2/2	
		Elective Course	2	
	<b>STREAMING: INTELLIGENT SYSTEM <sup>6)</sup></b>			
	COMP6822001	Speech Recognition	2/2	
	COMP6826001	Deep Learning	2/2	
		Elective Course	2	
	<b>STREAMING: DATABASE TECHNOLOGY <sup>6)</sup></b>			
	COMP6590001	Geographical Information System <sup>1)</sup>	2/2	
	COMP6140001	Data Mining	2/2	
		Elective Course	2	



Sem	Code	Course Name	SCU	Total
	STREAMING: INTERACTIVE MULTIMEDIA <sup>6)</sup>			
	COMP6583001	Computer Graphics	2/2	
	COMP7139001	Game Programming	4	
		Elective Course	2	
	STREAMING: NETWORK TECHNOLOGY <sup>6)</sup>			
	COSC6104001	Cloud Interfacing with Virtualization	2/2	
	COSC6105001	Cloud Native Applications	2/2	
		Elective Course	2	
	STREAMING: SOFTWARE ENGINEERING <sup>6)</sup>			
	COSC6102001	Software Metrics and Quality assurance	2/2	
	COSC6103001	Mobile Technology Solution <sup>2)</sup>	2/2	
		Elective Course	2	
	STREAMING: GAME TECHNOLOGY <sup>6)</sup>			
	GAME6093001	Serious Game & Gamification	2	
	GAME6084001	Game Development Capstone Project <sup>1), 2)</sup>	4	
	GAME6071001	3D Modeling for Games <sup>1), 2)</sup>	2	
	GAME6092001	Fundamental in Game Balancing	2	
	GAME6091001	Advanced Game Development	2	
	STREAMING: DATA SCIENCE <sup>6)</sup>			
	DTSC6010001	Bayesian Data Analysis	2	
	COMP6826001	Deep Learning	2/2	
	DTSC6002001	Data Management and Organization <sup>1)</sup>	2	
	DTSC6008001	Text Mining	2	
	DTSC6004001	Data Security	2	
	STREAMING: NETWORK SECURITY <sup>6)</sup>			
	COMP6544001	Network Penetration Testing <sup>2)</sup>	2/2	
	COMP6695001	Secure Programming <sup>1), 2)</sup>	2	
	COMP6843001	Reverse Engineering and Binary Exploitation	2	
	COMP6646001	Computer Forensic <sup>1), 2)</sup>	2	
	COMP6873001	Blockchain Fundamental	2	
	STREAMING: MOBILE AND GAME TECHNOLOGY <sup>7)</sup>			
	COMP6903051	Computer Vision	2/2	
	COMP6905051	Mobile and Game Development Capstone Project	4	
	STREAMING: AI-DRIVEN DEVELOPMENT <sup>8)</sup>			
	COSC6152060	Deep Learning & MLOps	4	
	COSC6153060	Capstone Project	4	
	ELECTIVE COURSE <sup>10)</sup>			
	COSC6161031	Introduction to Biomedical Science	2	
	COSC6162031	Introduction to Semiconductor Devices and Applications	2	
	COSC6163031	IT Project	2	
	ELECTIVE COURSE <sup>9)</sup>			
	COSC6108001	Mobile Programming	2	

Sem	Code	Course Name	SCU	Total
	COMP6586001	Embedded Systems	2	
	COMP6226001	Competitive Programming <sup>1)</sup>	2	
	COMP6821001	Web Programming	2	
	COSC6065001	Network Security Fundamental	2	
	COSC6101001	Mobile Professional Solution	2	
	<b>GENERAL COURSE <sup>11)</sup></b>			
	COMP6923051	Hybrid Application Development	2	
	<b>GENERAL COURSE <sup>12)</sup></b>			
	COSC6154060	Applied Artificial Intelligence for Enterprise	2	
	<b>Minor Program</b>		12	
	<b>Free Electives<sup>4),6)</sup></b>		12	
6	<b>Enrichment Program I</b>		20	Total SCU : 20 Cummulative SCU : 120
7	<b>Enrichment Program II</b>		20	Total SCU : 20 Cummulative SCU : 120
8	COMP6747004	Pre-Thesis	2	Total SCU : 6
	COMP6748004	Thesis	4	
	COMP6872004	Thesis	6	
				<b>Total Credits 146 SCU</b>

1) This course is delivered in English

2) Global Learning System course

3) Students will take foreign language courses according to BINUS University English proficiency test results. See foreign language courses appendix for the detail.

4) Conducted in BINUS@Malang

5) Conducted in BINUS@Bandung

6) Conducted in BINUS@Greater Jakarta

7) Conducted in BINUS@Semarang

8) Conducted in BINUS@Medan

9) Students will choose 1 course (2 credits) from the list of elective courses for Streaming : Intelligent Systems, Database Technology, Interactive Multimedia, Network Technology, Software Engineering, Minor Program, Free Electives, and Multidisciplinary Stream at Jakarta

10) Students will choose 1 course (2 credits) from the list of elective courses for streaming Internet Of Things, Cloud Technology, Minor Program BINUS@Bandung

11) Students choosing stream/minor in @Semarang must take general course Hybrid Application Development

12) Students choosing stream/minor in @Medan must take general course Hybrid Application Development

\*) Students choosing stream/minor in @Malang must take general course Database Design. Students undertaking mobility(Jakarta/Bandung) are required to take a general course/Elective course (2 SCU) on the host campus in semester 5.

#### Streaming or Minor or Free Electives or Mobility:

-) For 4<sup>th</sup> Semester: Students are required to choose Streaming or Minor or Free Electives or Multidisciplinary Stream or Mobility. For Free Electives, students are required to choose from the list of Free Electives in Appendix.

-) For 5<sup>th</sup> Semester: Students will continue to study the choose Streaming or Minor or Free Electives or Multidisciplinary Stream or Mobility that has been choosen in semester 4. For Free Electives, students are required to choose from the list of Free Electives in Appendix.

#### Foreign Language Courses:

Students will take foreign language courses according to BINUS University English proficiency test results. See foreign language courses appendix for the details. Students must pass with a minimum Grade of C.

**Pre-thesis (2 SCU) & Thesis (4 SCU)** can be taken in the 6<sup>th</sup> and/or 7<sup>th</sup> semester by the students who meet the requirements from the Study Program/Program



## Appendix Foreign Language Courses

Foreign language courses are personalized courses that can be taken by the students according to their own pace from semester 1 until semester 4 or before they take enrichment. The courses are available at BINUSMAYA – Beelingua.

Foreign Language Courses		SCU
ENGL6268004	English for Frontrunners	0
ENGL6269004	English for Independent Users	0
ENGL6267004	English for Professionals	0
JAPN6208004	Basic Japanese Language*	0
CHIN6185004	Basic Chinese Language*	0

\*) This course is optional for students

1. Students with Beelingua Placement Test score less than 60 are required to take English for Frontrunners and English for Independent Users.
2. Students with Beelingua Placement Test score between 60 and 99 are required to take English for Independent Users and English for Professionals.
3. Students with Beelingua Placement Test score greater than 99 are required to take English for Professionals. Additionally, students may choose to take either Basic Japanese Language or Basic Chinese Language.
4. Students are required to pass the foreign language courses before they take enrichment.
5. Students can see the requirements to pass the foreign language courses at BINUSMAYA – Beelingua

## Minor Scheme

Minor Program	Semester 4	Semester 5
<b>Minor @ Binus Kemanggisian</b>		
Digital Ecosystem	v	v
Human Capital in Digital Workplace	v	v
Sustainable Development	v	v
Cross Cultural Communication	v	v
Interactive & Users Expericence Design	v	v
Robotic Process Automation	v	v
Event Business and Entertainment	v	v
Creative Digital Storytelling	v	v
Digital Banking	v	v
English for Business Professional	v	v
Blockchain Technology and Business	v	v
<b>Minor @ Binus Alam Sutera</b>		
Digital Transformation	v	v
<b>Minor @ Binus Bekasi</b>		
Culinary	v	v
Korean Culture and Creativity	v	v
<b>Minor @ Binus Malang</b>		
Digital Technopreneur	v	v

Minor Program	Semester 4	Semester 5
English for Business Professional	v	v
Digital Creative Strategy	v	v
Chinese for Career Pathways	v	v
<b>Minor @ Binus Bandung</b>		
DesignPreneur	v	v
<b>Minor @ Binus Semarang</b>		
Metaverse in Business	v	v
Immersive Journey to Japanese Language and Culture	v	v
Content Creation	v	v
Data Analytics	v	v
<b>Minor @ Binus Medan</b>		
Global Creative Business and Technology	v	v

The minor programs can change anytime based on the trends of knowledge and industry each year. Students will receive information about the updated minor programs during the registration period.

### 1. Minor Program : Digital Ecosystem

#### Fundamental Courses

Group	Course	SCU
MKB	COSC6196001 Immersive Technology	2
	GAME6002001 Game Design	2
	ISYS6549003 Digital Innovation	4
	COMP6937001 Current Trends in Technology	2
<b>Total SCU</b>		<b>20</b>

#### Supporting Courses

Group	Course	SCU
MKB	COMM6501019 Narrative Development	4
	DSGN6834007 Visual Identity	4
	COMP6685001 Cyber Security for Business	2
<b>Total SCU</b>		<b>20</b>

### 2. Minor Program : Human Capital In Digital Workplace

#### Fundamental Courses

Group	Course	SCU
MKB	PSYC6174027 Psychology in The Workplace	4
	MGMT6349005 Digital Workplace Strategy	4
	ISYS6551003 Digital Workplace and Technology	4
	LAWS6157028 Legal Aspects in Digital Workplace	4
	PSYC6175027 Human Resources Development	4
<b>Total SCU</b>		<b>20</b>

### 3. Minor Program : Sustainable Development

#### Fundamental Courses

Group	Course	SCU
MKB	ISYE6154011 Sustainable Design and Manufacture	4
	CPEN6217010 Digital for Sustainable Development	4
	ARCH6119014 Introduction to Sustainable Development	2
Total SCU		10

#### Supporting Courses

Group	Course	SCU
MKB	ISYE6155011 Occupational, Health, Safety, and Administration in Engineering	2
	DSGN6835008 Engineering Material	4
	CIVL6118013 Engineering Economic	4
Total SCU		10

### 4. Minor Program : Cross Cultural Communication

#### Fundamental Courses

Group	Course	SCU
MKB	CHIN6132026 Chinese Conversation in Daily Activities	4
	COMM6502019 Communication in Diversity	2
	BUSS6170025 Asian Business Ethics	4
Total SCU		10

#### Supporting Courses

Group	Course	SCU
MKB	CHIN6134026 Chinese Conversation in Business Communication	4
	LAWS6158028 Private International Law	2
	INTR6135029 Comparative Politics	4
Total SCU		10

### 5. Minor Program : Interactive & Users Experience Design

#### Fundamental Courses

Group	Course	SCU
MKB	ISYS6553003 User-Centered Research and Evaluation	4
	PSYC6176027 Psychology and User Experience	4
	DSIN6003007 Fundamental of Interface Design	2
Total SCU		10

### Supporting Courses

Group	Course	SCU
MKB	ISYS6554003 Core Principles: Interactive Design	4
	DSGN6837007 Digital Design Production	4
	ISYS6556003 Information Architecture	2
Total SCU		10

## 5. Minor Program : Data Analytics

### Fundamental Courses

Group	Course	SCU
MKB	INFS6066052 Introduction to data Analytics	2
	INFS6067052 Data Management & Descriptive Analytics	4
	ISYE6371054 Statistical for Decision Making	4
Total SCU		10

### Supporting Courses

Group	Course	SCU
MKB	COSC6183051 Application of Predictive Analytics to Business Data	4
	ISYE6372054 Prescriptive Analytics and Optimization	4
	BUSS6277055 Digitalization of Markets and Consumption	2
Total SCU		10

## 6. Minor Courses : Robotic Process Automation

### Fundamental Courses

Group	Course	SCU
MKB	COMP6857001 Basic Programming for Automation	2
	COMP6858001 RPA Concept & Design	2
	ISYS6684003 RPA Developer Fundamental	4
	ISYS76687003 Business Process Improvement	2
Total SCU		10

### Supporting Courses

Group	Course	SCU
MKB	ISYS6685003 RPA Developer Advance	4
	ISYS6686003 RPA Business Analytics Fundamental	4
	COMP6859001 Intelligence Automation	2
Total SCU		10

## 7. Minor Courses : Event Business And Entertainment

### Fundamental Courses

Group	Course	SCU
MKB	HTMN6151021 Event Marketing Management	2
	HTMN6152021 Catering Management	4
	TRSM6232022 MICE (Meeting, Incentive, Convention, Exhibition) Management	4
Total SCU		10

### Supporting Courses

Group	Course	SCU
MKB	TRSM6233022 Event Sponsorship and Funding	2
	TRSM6234022 Sport and Entertainment Event Management	4
	TRSM6235022 Festival & Cultural Event	4
Total SCU		10

## 8. Minor Courses : Creative Digital Storytelling

### Fundamental Courses

Group	Course	SCU
MKB	ENGL6274024 Approaches in Multimodal Storytelling	2
	DSIN6033007 Visual Storytelling	2
	ENGL6275024 Storytelling for Business	2
	FILM6118009 Script Development & Pitching	4
Total SCU		10

### Supporting Courses

Group	Course	SCU
MKB	ENGL6276024 Cultures, Language, and Arts Production	4
	JAPN6212025 Anime and Manga as Storytelling	2
	ENGL6277024 Music as Medium for Storytelling	4
Total SCU		10

## 9. Minor Courses : Digital Banking

### Fundamental Courses

Group	Course	SCU
MKB	ISYS6824003 Technology Innovation in Banking	2
	FINC6217020 Bank Risk Management in the Digital Era	4
	FINC6218020 Digital Finance and The Role of Central Bank	4
Total SCU		10

**Supporting Courses**

Group	Course	SCU
MKB	MGMT6510005 Business Process Management in Banking and Finance	4
	ISYS6825003 Data Analytics in Banking and Finance	4
	MGMT6511005 Digital Leadership	2
<b>Total SCU</b>		<b>10</b>

**10. Minor Courses : English For Business Professional**
**Fundamental Courses**

Group	Course	SCU
MKB	ENGL6154024 English for Business Communications	4
	MKTG6112024 Language Innovations in Marketing and Advertising	2
	ENGL6244024 Social Media Broadcasting	4
<b>Total SCU</b>		<b>10</b>

**Supporting Courses**

Group	Course	SCU
MKB	ENGL6258024 English for Global Leadership	2
	ENGL6169024 English for Professionals	2
	COMM6506024 Current Issues in Business Communications	2
	ENGL6245024 Business Rhetoric	4
<b>Total SCU</b>		<b>10</b>

**11. Minor Courses : Blockchain Technology and Business**
**Fundamental Courses**

Group	Course	SCU
MKB	ISYS6826003 Introduction to Blockchain Technology	4
	ISYS6827003 Blockchain Economy & Business	4
	DTSC6016001 Basic Blockchain Programming	2
<b>Total SCU</b>		<b>10</b>

**Supporting Courses**

Group	Course	SCU
MKB	ISYS6828003 Blockchain Architecture Design and Implementation	4
	DTSC6017001 Advanced Blockchain Programming	2
	DTSC6018001 Prototyping Blockchain Project	4
<b>Total SCU</b>		<b>10</b>



## 12. Minor Courses : Digital Transformation

### Fundamental Courses

Group	Course	SCU
MKB	ISYS6559003 Business Models and Technology Innovation	4
	ISYS6557003 Business Data Management	4
	MGMT6484005 Digital Strategy	2
Total SCU		10

### Supporting Courses

Group	Course	SCU
MKB	ISYS6695003 Digital Marketing Analysis	4
	STAT6200049 Practical Statistics for Digital Business	4
	ISYS6560003 Success Factor for Leading Digital Transformation	2
Total SCU		10

## 13. Minor Courses : Culinary

### Fundamental Courses

Group	Course	SCU
MKB	HTMN6108021 Food and Beverage Management	2
	HTMN6008021 Kitchen Operation	4
	HTMN6128021 Pastry and Bakery Operation	4
Total SCU		10

SCU for HTMN6008021, HTMN6128021 are practical

### Supporting Courses

Group	Course	SCU
MKB	HTMN6155021 Indonesian Cuisine	4
	HTMN6125021 Restaurant Operation	4
	HTMN6154021 Culinary Tourism	2
Total SCU		10

SCU for HTMN6155021, HTMN6125021 are practical

## 14. Minor Courses : Korean Culture and Creativity

### Fundamental Courses

Group	Course	SCU
MKB	HTMN6163021 Korean Cuisine and Culinary Arts	4
	COMM6718019 Korean Language and Media	4
	FILM6134009 Hallyu Creative Content	2
Total SCU		10

### Supporting Courses

Group	Course	SCU
MKB	FILM6135009 K-Drama and Beyond: Analysis and Appreciation	4
	COMM6719019 K-Pop Culture and Performance	4
	MKTG6339005 K-Pop and K-Drama Marketing and Promotion	2
Total SCU		10

### 15. Minor Courses : Digital Technopreneur

#### Fundamental Courses

Group	Course	SCU
MKB	ENTR6528002 The Entrepreneurial Innovator	4
	ENPR6370002 Market Intelligence	4
	COMP6687004 User Experience Design	4
	COSC6164004 Web Programming for Business	4
	COSC6165004 Data Analytics for Business	4
Total SCU		20

### 16. Minor Courses : DesignPreneur

#### Fundamental Courses

Group	Course	SCU
MKB	ENTR6525032 Fundamental of Designpreneur	4
	COMP6688031 UI/UX Development	4
	DSGN6797034 Surface Packaging Design	4
	ENTR6526032 Hospitality and Service Design	4
	DSGN6843033 Project Design	4
Total SCU		20

### 17. Minor Courses : Metaverse in Business

#### Fundamental Courses

Group	Course	SCU
MKB	ISYS6777052 Business Model	2
	COMP6889051 Virtual Reality	4
	COMP6890051 Augmented reality	4
Total SCU		10

### Supporting Courses

Group	Course	SCU
MKB	ISYS6778052 Data Analytics	2
	DSGN6981053 Design Thinking	4
	DSGN6980053 Interface Design	4
Total SCU		10

## 18. Minor Courses : Content Creation

### Fundamental Courses

Group	Course	SCU
MKB	FILM6105009      Filmmaking Fundamental	4
	MKTG6392055      Digital marketing	4
	DSIN6042053      Photography for Creators	2
<b>Total SCU</b>		<b>10</b>

### Supporting Courses

Group	Course	SCU
MKB	DSGN6990053      Creative Storytelling	4
	DSIN6043053      Strategic Influence	2
	DSIN6041053      Introduction to Visual Communication Design	4
<b>Total SCU</b>		<b>10</b>

## 19. Minor Courses : Global Creative Business and Technology

### Fundamental Courses

Group	Course	SCU
MKB	DSIN6142066      Global Interactive Design	4
	BUSS6275061      E-Commerce and Digital Entrepreneurship	4
	COSC6159060      Emerging Technologies in Global Business	4
	ISYS6997064      Blockchain for Digital Economy	4
	TRDE6001065      Global Regulatory Environment	4
<b>Total SCU</b>		<b>20</b>

## 20. Minor Courses : Chinese for Career Pathways

### Fundamental Courses

Group	Course	SCU
MKB	CHIN6196026      Mandarin for Future Career	4
	CHIN6197026      Easy Way to HSK 2 Preparation	4
	CHIN6198026      Exploring Modern Chinese Culture	2
<b>Total SCU</b>		<b>10</b>

### Supporting Courses

Group	Course	SCU
MKB	CHIN6199026      Chinese Digital Technology	2
	CHIN6200026      Traveling to China	2
	CHIN6201026      Special Topics in Chinese Business	2
	CHIN6202026      Global Strategic Marketing: Chinese Perspective	4
<b>Total SCU</b>		<b>10</b>

## 21. Minor Courses : Digital Creative Strategy

### Fundamental Courses

Group	Course	SCU
MKB	DSIN6150023 Creative Project Management	4
	COMM6770012 Media Strategy & Planning	4
	COMM6771018 Business Communication	2
	DSIN6152006 Visual Language	4
	DSIN6151023 Creative Business Development	4
	COMM6772012 Digital Literacy	2
Total SCU		20

## 22. Minor Courses : Immersive Journey to Japanese Language and Culture

### Fundamental Courses

Group	Course	SCU
MKB	JAPN6221025 Essential Japanese Grammar ( <i>Yoku Tsukaeru Bunpou</i> )	4
	JAPN6222025 Survival Japanese in Various Situations ( <i>Nihon E Ikou, Yasashii Kaiwa De</i> )	4
	JAPN6223025 Ideas and Images of Japan ( <i>Nihon Jijou</i> )	2
Total SCU		10

### Supporting Courses

Group	Course	SCU
MKB	JAPN6224025 Japanese Reading Comprehension ( <i>Tanoshiku Yomou</i> )	4
	JAPN6225025 Understanding Native Japanese Speakers ( <i>Tanoshiku Kikou</i> )	2
	JAPN6226025 Japanese N5 Level Certification Preparation ( <i>Nihongo Charenji N5</i> )	4
Total SCU		10

## Appendix: Free Electives (4<sup>th</sup> & 5<sup>th</sup> Semester)

No	Course Owner Department	Course Code	Course Name	SCU	Semester
1	Management	BUSS6109005	Business Development	4	4
2	Chinese Literature	CHIN6157026	Chinese Business for Etiquette (Beginner)	4	4
3	Civil Engineering	CIVL6080013	Construction Methods & Heavy Equipment	2	4
4	Communication	COMM6276012	Intercultural Communication	4	4
5	Public Relations	COMM6480018	Consumer and Audience Analytics	4	4
6	Communication	COMM6575012	Current Issues in Communication	4	4
7	Public Relations	COMM6671018	Global Branding Strategy	4	4
8	Public Relations	COMM6673018	Event Management	2/2	4
9	Visual Communication Design	DSGN6671007	Creative Writing for Commercials	4	4
10	Visual Communication Design	DSGN6828006	Intellectual Property Design	4	4
11	Visual Communication Design	DSIN6014006	Ethics and Lawsuit in Photography	4	4

No	Course Owner Department	Course Code	Course Name	SCU	Semester
12	English Literature	ENGL6169024	English for Professionals	2	4
13	English Literature	ENGL6244024	Social Media Broadcasting	4	4
14	Entrepreneurship Business Creation	ENPR6175002	Business Process Management for Innovation	4	4
15	Entrepreneurship Business Creation	ENPR6176002	Negotiation and Competitive Decision Making	2	4
16	Entrepreneurship Business Creation	ENTR6664002	Consumer Insights: Behavioural Fundamentals	4	4
17	Entrepreneurship Business Creation	ENTR6668002	Innovation in Omni Channel	2	4
18	Entrepreneurship Business Creation	ENTR6669002	Innovation and Knowledge Management	4	4
19	International Relations	INTR6162029	Multiculturalism and Digital Society	2	4
20	Industrial Engineering	ISYE6041011	Engineering Economy	2	4
21	Industrial Engineering	ISYE6113011	Leadership & Organizational Behavior	2	4
22	Industrial Engineering	ISYE6181011	System Engineering & Analysis	2	4
23	Information Systems	ISYS6574003	Information Retrieval	4	4
24	Information Systems	ISYS6606003	Smart Application	2	4
25	Management	MGMT6365005	Current Issue in Service Business and Technology	2	4
26	English Literature	SOCS6021024	Social and Digital Media Writing	2	4
27	Interior Design	ARTS6035023	Design History Studies	2	5
28	Management	BUSS6109005	Business Development	4	5
29	Chinese Literature	CHIN6157026	Chinese Business for Etiquette (Beginner)	4	5
30	Civil Engineering	CIVL6080013	Construction Methods & Heavy Equipment	2	5
31	Interior Design	CIVL6127023	Material Knowledge in Interior Design	2	5
32	Communication	COMM6313012	Public Speaking	4	5
33	Communication	COMM6541019	Digital Corporate Communication	2/2	5
34	Public Relations	COMM6566018	Integrated Marketing Communications	2	5
35	Public Relations	COMM6650018	Image and Reputation Management	4	5
36	Public Relations	COMM6651018	Professional Communication in Business Setting	4	5
37	Public Relations	COMM6671018	Global Branding Strategy	4	5
38	Public Relations	COMM6673018	Event Management	2/2	5
39	Communication	COMM6677012	Society and Digital Culture	2	5
40	Civil Engineering	COMP6046013	Computer Applications in Construction Management	2	5
41	Computer Science	COMP6586001	Embedded Systems	2	5
42	Computer Science	COMP6590001	Geographical Information System	2/2	5
43	Computer Science	COMP6821001	Web Programming	2	5
44	Computer Engineering	CPEN6126010	Cross Platform Application Development	4	5
45	Computer Engineering	CPEN6232010	Cloud Technology Practice	2	5
46	Interior Design	DSGN6497023	Interior Drawing	4	5
47	Visual Communication Design	DSGN6689007	Concept Art & Production Design	2	5
48	Visual Communication Design	DSGN6743007	Digital Graphic Reproduction	4	5
49	Interior Design	DSGN6747023	Ergonomic and Anthropometry	2	5
50	Visual Communication Design	DSGN6822006	Photography	4	5
51	Visual Communication Design	DSGN6828006	Intellectual Property Design	4	5
52	Visual Communication	DSIN6014006	Ethics and Lawsuit in Photography	4	5





Track	Semester 6							Semester 7							
	IN	RS	EN	CD	SA	IS	etc	IN	RS	EN	CD	SA	IS	FS	etc
17							v	v							
18							v				v				
19							v					v			

**Note:**

IN	: Certified Internship	SA	: Certified Study Abroad
RS	: Certified Research	IS	: Certified Specific Independent Study
EN	: Certified Entrepreneurship	FS	: Further Study
CD	: Certified Community Development	etc	: Study Program Special Purposes

**Description:**

Student will take one of enrichment program tracks

Students who failed in Enrichment Program I can retake with the same track or change into another track. As for Enrichment Program II, student who failed with Internship, Research, Community Development, and Study Abroad track on Enrichment Program II, can retake with the same track or change into another track. However students who take **Entrepreneurship** track on Enrichment Program II, should **retake with another track**.

**Certified Internship Track**

Code	Course Name	SCU	Total
Enrichment Program I			20
COMP6930004	Industrial Experience in Information Technology	8	
COMP6931004	Information Technology Practice in Industrial Experience	8	
COMP6932004	EES in Information Technology Industry	4	
Enrichment Program II			20
COMP6933004	Professional Experience in Information Technology	8	
COMP6934004	Information Technology Practice in Professional Experience	8	
COMP6935004	Professional Development in Information Technology Industry	4	

**Certified Research Track**

Code	Course Name	SCU	Total
Enrichment Program I			20
RSCH6089004	Research Experience I	8	
RSCH6573004	Scientific Writing I	8	
RSCH6091004	Global EES I (Team Work, Communication, Problem Solving & Decision Making)	4	
Enrichment Program II			20
RSCH6092004	Research Experience II	8	
RSCH4574004	Scientific Writing II	8	
RSCH6094004	Global EES II (Self-Management, Planning & Organizing, Initiative & Enterprise)	4	

**Certified Entrepreneurship Track**

Code	Course Name	SCU	Total
<b>Enrichment Program I</b>			20
ENPR6144004	New Venture Initiation in Computer Science	8	
ENPR6145004	Computer Science Product Development Process	8	
ENPR6146004	EES in New Computer Science Business I	4	
<b>Enrichment Program II</b>			20
ENPR6147004	Computer Science Product Launching	8	
ENPR6148004	Computer Science Business Development	8	
ENPR6149004	EES in New Computer Science Business II	4	

**Certified Community Development Track**

Code	Course Name	SCU	Total
<b>Enrichment Program I</b>			20
CMDV6028004	Community Outreach Project Implementation	8	
CMDV6347004	Community Outreach Project Design	8	
CMDV6030004	Employability and Entrepreneurial Skills	4	
<b>Enrichment Program II</b>			20
CMDV6031004	Community Development Project Implementation	8	
CMDV6348004	Community Development Project Design	8	
CMDV6033004	Employability and Entrepreneurial Skills	4	

**Certified Study Abroad Track**

Code	Course Name	SCU	Total
<b>Enrichment Program I</b>			20
GLOB6093004	Elective Course for Study Abroad 1	4	
GLOB6094004	Elective Course for Study Abroad 2	4	
GLOB6095004	Elective Course for Study Abroad 3	4	
GLOB6096004	Elective Course for Study Abroad 4	4	
GLOB6257004	Elective Course for Study Abroad 25	4	
GLOB6258004	Elective Course for Study Abroad 26	2	
GLOB6259004	Elective Course for Study Abroad 27	2	
GLOB6097004	Elective Course for Study Abroad 5	2	
GLOB6098004	Elective Course for Study Abroad 6	2	
GLOB6099004	Elective Course for Study Abroad 7	2	
GLOB6100004	Elective Course for Study Abroad 8	2	
GLOB6101004	Elective Course for Study Abroad 9	2	
GLOB6102004	Elective Course for Study Abroad 10	2	
GLOB6103004	Elective Course for Study Abroad 11	2	
GLOB6104004	Elective Course for Study Abroad 12	2	
<b>Enrichment Program II</b>			20

Code	Course Name	SCU	Total
GLOB6105004	Elective Course for Study Abroad 13	4	
GLOB6106004	Elective Course for Study Abroad 14	4	
GLOB6107004	Elective Course for Study Abroad 15	4	
GLOB6108004	Elective Course for Study Abroad 16	4	
GLOB6286004	Elective Course for Study Abroad 28	4	
GLOB6287004	Elective Course for Study Abroad 29	2	
GLOB6288004	Elective Course for Study Abroad 30	2	
GLOB6109004	Elective Course for Study Abroad 17	2	
GLOB6110004	Elective Course for Study Abroad 18	2	
GLOB6111004	Elective Course for Study Abroad 19	2	
GLOB6112004	Elective Course for Study Abroad 20	2	
GLOB6113004	Elective Course for Study Abroad 21	2	
GLOB6114004	Elective Course for Study Abroad 22	2	
GLOB6115004	Elective Course for Study Abroad 23	2	
GLOB6116004	Elective Course for Study Abroad 24	2	

\*) Transferred courses will be transferred based on credit transfer policies on study program with total of 20 credits

### Certified Specific Independent Study Track

Code	Course Name	SCU	Total
Elective courses list for Specific Independent Study*			20
Enrichment Program I/II			
MICR6145004	Course Certification I	3	
MICR6146004	Technical Skill Enrichment I	4	
MICR6147004	Industrial Project I	9	
MICR6148004	Soft Skill Enrichment I	4	
MICR6149004	Elective Course for Specific Independent Study 1	8	
MICR6150004	Elective Course for Specific Independent Study 2	8	
MICR6151004	Elective Course for Specific Independent Study 3	6	
MICR6152004	Elective Course for Specific Independent Study 4	6	
MICR6153004	Elective Course for Specific Independent Study 5	6	
MICR6154004	Elective Course for Specific Independent Study 6	5	
MICR6155004	Elective Course for Specific Independent Study 7	5	
MICR6156004	Elective Course for Specific Independent Study 8	5	
MICR6157004	Elective Course for Specific Independent Study 9	5	
MICR6158004	Elective Course for Specific Independent Study 10	4	
MICR6159004	Elective Course for Specific Independent Study 11	4	
MICR6160004	Elective Course for Specific Independent Study 12	4	
MICR6161004	Elective Course for Specific Independent Study 13	4	
MICR6162004	Elective Course for Specific Independent Study 14	4	
MICR6163004	Elective Course for Specific Independent Study 15	3	
MICR6164004	Elective Course for Specific Independent Study 16	3	

Code	Course Name	SCU	Total
MICR6165004	Elective Course for Specific Independent Study 17	3	
MICR6166004	Elective Course for Specific Independent Study 18	3	
MICR6167004	Elective Course for Specific Independent Study 19	3	
MICR6168004	Elective Course for Specific Independent Study 20	3	
MICR6169004	Elective Course for Specific Independent Study 21	2	
MICR6170004	Elective Course for Specific Independent Study 22	2	
MICR6171004	Elective Course for Specific Independent Study 23	2	
MICR6172004	Elective Course for Specific Independent Study 24	2	
MICR6173004	Elective Course for Specific Independent Study 25	2	
MICR6174004	Elective Course for Specific Independent Study 26	2	
MICR6175004	Elective Course for Specific Independent Study 27	2	
MICR6176004	Elective Course for Specific Independent Study 28	2	
MICR6177004	Elective Course for Specific Independent Study 29	1	
MICR6178004	Elective Course for Specific Independent Study 30	1	
MICR6179004	Elective Course for Specific Independent Study 31	1	
MICR6180004	Elective Course for Specific Independent Study 32	1	

\*) For students who take BINUS certified specific independent study courses, they should take the first 4 courses on the list above (20 credits). Meanwhile, electives courses 1 to 32 are transferred courses for students who take certified specific independent study courses outside BINUS University. Transferred courses will be transferred based on credit transfer policies on study program with total of 20 credits

### Certified Further Study Track

Code	Course Name	SCU	Total
<b>Enrichment Program II</b>			
COMP6815001	IT Disaster Recovery	4	20
COMP6816001	Wireless and Cloud Computing Technologies	4	
COMP6817001	Internet Tools and Services	4	
COMP6818001	Cyber Risk Management	4	
COMP6819001	Knowledge Engineering	4	

**Student should pass all of these quality controlled courses as listed below:**

No	Course Code	Course Name	Minimal Grade
1.	CHAR6030004	Character Building: Pancasila	B
2.	ENPR6316002	Venture Creation	C
3.	COMP6360004	Algorithm and Programming	C
4.	COMP6362004	Data Structures	C
5.	COMP6840004	Program Design Methods	C
6.	COMP6855004	Software Engineering	C
7.	COMP6852004	Database Technology	C
8.	COMP6713004	Operating System	C