Computer Science Bandung

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.

The Computer Science Program was founded in September 1987, under STMIK Bina Nusantara; it became one of the programs under the coordination of the Faculty of Computer Science, Bina Nusantara University in December 1998.

Computer Science Program, Bina Nusantara University @Bandung emphasizes the processes, techniques, and tools that go into developing computer-based systems, with specialities in Internet of Things(IoT), intelligent systems, software engineering, data base system, game technology, mobile technology and computer security.

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 and smart technology.

Mission

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

1. Educating students to effectively apply their educational experiences indeveloping creative solutions in computer science, to solve real-world problems.
2. Preparing graduates to develop exemplary soft skills & technical skills required as computer science professionals, leaders, and entrepreneurs inglobal market.
3. Promoting high impact computer science research that contributes to thenation.
4. Fostering BINUSIAN as computer science lifelong learners through self-enrichment.
5. Empowering BINUSIAN to continuously improve and society's quality of life through smart technology and designpreneur 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

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. Software Engineer/Developer
2. System Analyst/Developer
3. Web Engineer/Developer
4. Computer Network Specialist
5. Database Specialist
6. Artificial Intelligence Specialist
7. Data Scientist
8. IT Support/Consultant
9. Researcher
10. Multimedia Programmer
11. Lecturer/Trainer

Curriculum

The curriculum of the Computer Science 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 Program are expected to be able to face competition at both a national and international level. Generally, the subjects of the curriculum 2019 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, databases systems, computer graphics, multimedia technology, human and computer interaction, operation systems, computer architecture, and computer network.

Concentration Subject (Stream)

The objective of this group is to give students the opportunity to obtain a deep understanding of a range of disciplines in computer science. The students are expected to develop their skills and master the techniques which will allow them to research both their thesis and/or to continue their studies.

The Concentration subjects (Stream) provide:

1. Internet of Things: to explore the various techniques and implementation of IoT.
2. Cloud Technology: to explore various techiniques for cloud management, especially managing the network and computing services.
3. Digital Creative Technology: focuses on competencies' development in smart software application development field based on big data analytics to support business innovation through digital transformation in Industry 4.0 era (Digital Business Innovation and Transformation).
4. Intelligent Systems: to explore the various techniques of computer intelligence that can be applied to solving problems.
5. Database Technology: to explore the various techniques of database technology that can be applied to solving problems.
6. Interactive Multimedia: to explore computer interactive multimedia applications, based on computer programming, design tools, and software engine.
7. Network Technology: to explore computer networking which consists of installation, administration, and computer networking management.
8. Game Technology: to explore development of game applications, based on computer programming, design tools, and software engine.
9. Data Science: to explore various technology tools, statistics, and machine learning with the goal of discovering hidden patterns from the raw data. It can enhance productivity and create significant value.
10. Cyber Security: to explore specialized computer security related techniques and implementation
11. Software Engineering: to explore the various methodologies and software engineering equipment.

Entrepreneur and Employability Skill (Internship)

The objective of this group of subject is to prepare students with professional experience, work ethics and to experience the working environment. The students are expected to apply and to practice their knowledge in the real working area such as industry, research lab, and also an entrepreneur startup. They are also expected to give reports as the result of the subjects.

Course Structure

Sem	Code	Course Name	SCU	Total
1	CHAR6034031	Character Building: Pancasila	2	20
	MATH6128031	Discrete Mathematics	4	
	MATH6129031	Linear Algebra	2	
	COMP6421031	Algorithm and Programming [2]	4/2	
	COMP6839031	Program Design Methods [1]	2	
	LANG6097031	Indonesian	2	
	STAT6190031	Basic Statistics	2	
	Foreign Language Courses [3]		0	

Sem	Code	Course Name	SCU	Total
2	CHAR6035031	Character Building: Kewarganegaraan	2	20
	COMP6458031	Data Structures [1], [2]	4/2	
	MATH6135031	Calculus	4	
	ENTR6522032	Entrepreneurship: Ideation	2	
	COMP6846031	Human and Computer Interaction [2]	2/1	
	MATH6192031	Scientific Computing	2/1	
	Foreign Language Courses [3]		0	
3	CHAR6038031	Character Building: Agama	2	21
	COMP6472031	Algorithm Design and Analysis [1]	4	
	CPEN6249031	Computer Networks [2]	2/1	
	COMP6468031	Artificial Intelligence	4	
	SCIE6065031	Computational Physics	2/1	
	COMP6847031	Database Technology	2/1	
	COMP6848031	Object Oriented Programming [1]	2	
	Foreign Language Courses [3]		0	
4	COMP6715031	Research Methodology in Computer Science [1]	2	9
	SCIE6066031	Computational Biology	2/1	
	COMP6466031	Software Engineering [2]	4	
	Streaming: Internet Of Things (IoT) [4]			
	COMP6849031	Embedded System	2/2	12
	COMP6850031	Multimedia & Mixed Reality	2/1	
	MOBI6072031	Mobile Programming	2/1	
	COMP6655031	Cyber Security in IoT	2	
	Streaming: Cloud Technology (CT) [4]			
	COMP6988031	Introduction to Cloud Computing	2/2	10
	COMP6989031	Web Based Programming	2/2	
	COMP6990031	Introduction to Cloud security	2	
	Streaming: Digital Creative Technology (DCT) [5]			
	COMP6679004	Web Programming [2]	4	10
	COSC6109004	Popular Programming Technology [1]	4	
	COSC6001004	User Experience	2	
	Streaming: Immersive Technology [5]			
	COSC6002004	User Experience for Digital Immersive Technology	2	10
	COSC6003004	Multimedia and 3D Modelling	2/2	
	COSC6004004	3D Web Programming	2/2	
	Streaming: Software Engineering (SE) [6]			
	COMP6106001	Code Reengineering	4	12
	COMP6114001	Pattern Software Design	2/2	
	COMP6884001	Agile Software Development [1], [2]	4	
	Streaming: Intelligent System (IS) [6]			
	COMP6885001	Natural Language Processing [1], [2]	2/2	12
	COMP6577001	Machine Learning	4	

Sem	Code	Course Name	SCU	Total
	COMP6822001	Speech Recognition	2/2	
	Streaming: Interactive Multimedia (IM) 6)			
	COMP8129001	User Experience 1), 2)	2/2	12
	COMP6823001	Multimedia System 2)	2	
	COMP7094001	Multimedia Programming Foundation 1)	2/2	
	COMP7128001	Game Design	2	
	Streaming: Database Technology (DT) 6)			
	COMP6481001	Database Design	2/1	12
	COMP6579001	Big Data Processing 1), 2)	2/2	
	COMP6710001	Distributed Cloud Computing	2/1	
	COMP6886001	Data Analytics	2	
	Streaming: Network Technology (NT) 6)			
	COMP6824001	Computer Security 1)	2/2	12
	COMP6584001	Network and System Programming 1), 2)	2/2	
	COMP6827001	Linux System Administration and Security	2/2	
	Streaming: Game Application Technology (GAT) 6)			
	GAME6069001	Game Programming 1), 2)	4	10
	GAME6082001	Game Animation 1), 2)	2	
	MOBI6006001	Mobile Community Solution 1), 2)	2/2	
	Streaming: Mobile Application Technology			
	COMP6823001	Multimedia Systems 2)	2	9
	MOBI6006001	Mobile Community Solution 1), 2)	2/2	
	MOBI6069001	Wearable Technology 1), 2)	3	
	Streaming: Data Science (DS) 6)			
	DTSC6013001	Data Mining and Visualization 1)&2)	2	10
	DTSC6011001	Survey and Sampling Methods	2	
	COMP6577001	Machine Learning	4	
	DTSC6003001	Big Data Infrastructure and Technology 1)	2	
	Streaming: Cyber Security (Cyber) 6)			
	COMP6842001	Server and Network Administration 1), 2)	2	10
	COMP6549001	Software Security 1), 2)	2	
	COMP6844001	Mobile Penetration Testing 2)	2/2	
	LAWS6110001	Cyber Law	2	
	Streaming: Mobile And Game Technology 7)			
	COMP6897051	Game Design & Programming	2/2	12
	COMP6898051	User Experience	2	
	COMP6899051	Machine Learning	2	
	COMP6900051	Mobile Embedded Systems	4	
	General Course 8)			2
	COMP6955004	Database Design	2	
	Foreign Language Courses 3)		0	0
	Minor Program 4), 5), 6)		12	12

Sem	Code	Course Name	SCU	Total
	Free Electives [6]		12	12
	COMP6470031	Compilation Techniques	4	8
	COMP6716031	Operating System	2	
	ENTR6524032	Entrepreneurship: Market Validation	2	
	Streaming: Internet Of Things (IoT) [4]			8
	COMP6757031	Computer vision in IoT	2/2	
	COMP6882031	IoT Development and Architecture	2/2	
	Streaming: Cloud Technology (CT) [4]			10
	COMP6991031	Cloud Services	2/2	
	COMP6992031	Software Development Operations in Cloud Environments	2	
	COMP6993031	Application Development in Cloud	2/2	
	Streaming: Digital Creative Technology (DCT) [5]			10
	COMP6678004	Big Data Analytics for Business	4	
	MOBI6063004	Mobile Application Programming [2]	4	
	COSC6005004	Agile Software Development	2	
	Streaming: Immersive Technology [5]			10
	COSC6006004	Augmented Reality Application Programming	2/2	
5	COSC6007004	Virtual Reality Application Programming	2/2	
	COSC6008004	Immersive Technology Capstone Project	2	
	Streaming: Software Engineering (SE) [6]			8
	COMP6122001	Framework Layer Architecture	2/2	
	COMP6115001	Object Oriented Analysis & Design [1]	2/2	
	Streaming: Intelligent System (IS) [6]			8
	COMP6583001	Computer Graphics	2/2	
	COMP7139001	Game Programming [1]	4	
	Streaming: Interactive Multimedia (IM) [6]			8
	COMP6583001	Computer Graphics	2/2	
	COMP7139001	Game Programming [1]	4	
	Streaming: Database Technology (DT) [6]			8
	COMP6590001	Geographical Information System [1]	2/2	
	COMP6140001	Data Mining	2/2	
	Streaming: Network Technology (NT) [6]			8
	COMP68250001	Introduction to Cloud Infrastructure	2	
	COMP7142001	Popular Network Technology	2/2	
	COMP6113001	Network Design	2	
	Streaming: Game Application Technology (GAT) [6]			12
	GAME6093001	Serious Game & Gamification	2	
	GAME6084001	Game Development Capstone Project [1, 2]	4	
	GAME6071001	3D Modeling for Games [1, 2]	2	
	GAME6092001	Fundamental in Game Balancing	2	
	GAME6091001	Advanced Game Development	2	

Sem	Code	Course Name	SCU	Total
	Streaming: Data Science (DS) [6]			
	DTSC6010001	Bayesian Data Analysis	2	12
	COMP6826001	Deep Learning	2/2	
	DTSC6002001	Data Management and Organization [1]	2	
	DTSC6008001	Text Mining	2	
	DTSC6004001	Data Security	2	
	Streaming: Cyber Security (Cyber) [6]			
	COMP6544001	Network Penetration Testing [2]	2/2	12
	COMP6695001	Secure Programming [1], [2]	2	
	COMP6843001	Reverse Engineering and Binary Exploitation	2	
	COMP6646001	Computer Forensic [1], [2]	2	
	COMP6873001	Blockchain Fundamental	2	
	Streaming: Mobile And Game Technology [7]			
	COMP6903051	Computer Vision	2/2	12
	COMP6905051	Mobile and Game Development Capstone Project	4	
	Elective Course for IOT [8] & [11]			
	COMP6921031	Web Development	2	2
	COMP6922031	Cloud Computing	2	2
	Elective Course for CT [8] & [11]			
	COSC6009031	Mobile Programming	2	2
	COSC6010031	Embedded Systems	2	2
	Elective Course [9]			
	MOBI6059001	Mobile Programming	2	2
	COMP6586001	Embedded Systems	2	2
	COMP6226001	Competitive Programming [1]	2	2
	COMP6681001	Web Programming	2	2
	General Course for MGT [10]			
	COMP6923051	Hybrid Application Development	2	2
	Minor Program [4], [5], [6]		8	8
	Free Electives [6]		8	8
6	**Enrichment Program I**		20	20
7	**Enrichment Program II**		20	20
8	COMP6747031	Pre-Thesis	2	6
	COMP6748031	Thesis	4	
	COMP6501031	Thesis	6	6
			Total Credits 146 SCU	

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@Bandung
5) Conducted in BINUS@Malang
6) Conducted in BINUS@Greater Jakarta
7) Conducted in BINUS@Semarang

For 4th Semester:

8) General Course must be chosen by mobility students to BINUS@Malang (include streaming and minor program)

For 5th Semester

8) Students @Bandung must choose one of the elective course (2 credits).
9) Students must choose 1 course (2 credits) from the list of elective courses for Minor Program Jakarta or Streaming SE, IS, IM,DT, NT.
10) Students must choose course Hybrid Application Development from the elective course for Minor Metaverse in Business and Streaming MGT
11) Students must choose 1 course (2 credits) from the list of elective courses only for Minor Designpreneur

Streaming/Minor/Free Electives:

-) In 4th Semester, Students are required to choose one study plans, between Streaming, Minor Program, Free Electives. Please refer to the Minor program, free electives and cross streaming course list appendix for details.

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. <u>Students must pass with a minimum Grade of C</u>.

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

Appendix Foreign Language Courses

Foreign Language Courses		SCU
ENGL6270031	English for Frontrunners	0
ENGL6271031	English for Independent Users	0
ENGL6272031	English for Professionals	0
JAPN6209031	Basic Japanese Language	0
CHIN6192031	Basic Chinese Language	0

1. Students with Binus University English Proficiency Test score less than 437 are required to take English for Frontrunners and English for Independent Users.

2. Students with Binus University English Proficiency Test score less than 520 are required to take English for Independent Users and English for Professionals.

3. Students with Binus University English Proficiency Test score equal to or greater than 520 are required to take English for Professionals and choose 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
Minor @ Binus Kemanggisan		
Digital Ecosystem	-	-
Human Capital in Digital Workplace	v	v
Sustainable Development	v	v
Cross Cultural Communication	v	v
Interactive & Users Experience Design	v	v
Data Analytics	v	v
Robotic Process Automation	v	v

Minor Program	Semester 4	Semester 5
Blockchain Technology and Business	v	v
Creative Digital Storytelling	v	v
Digital Banking	v	v
Event Business and Entertainment	v	v
Minor @ Binus Alam Sutera		
Digital Transformation	v	v
Minor @ Binus Bekasi		
Virtual Services Experience	-	-
Culinary	v	v
Minor @ Binus Malang		
Digital Technopreneur	v	v
Minor @ Binus Bandung		
DesignPreneur	v	v
Minor @ Binus Semarang		
Content Creation	v	v
Metaverse in Business	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 : Human Capital in Digital Workplace

Fundamental Courses

	Course	SCU
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
	Total SCU	**20**

2. Minor Program: Sustainable Development

Fundamental Courses

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

Supporting Courses

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

3. Minor Program : Cross Cultural Communication

Fundamental Courses

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

Supporting Courses

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

4. Minor Program : Interactive & Users Experience Design

Fundamental Courses

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

Supporting Courses

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

5. Minor Program : Data Analytic

Fundamental Courses

Course		SCU
ISYS6680003	Introduction to Data Analytics	2
ISYS6681003	Data Management & Descriptive Analytics	4
STAT6198049	Statistical for Decision Making	4
	Total SCU	10

Supporting Courses

Course		SCU
ISYS6682003	Application of Predictive Analytics to Business Data	4
ISYS6683003	Prescriptive Analytics and Optimization	4
MKTG6312005	Digitalization of Markets and Consumption	2
	Total SCU	10

6. Minor Program : Robotic Process Automation

Fundamental Courses

Course		SCU
COMP6857001	Basic Programming for Automation	2
COMP6858001	RPA Concept & Design	2
ISYS6684003	RPA Developer Fundamental	4
ISYS6687003	Business Process Improvement	2
	Total SCU	**10**

Supporting Courses

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

7. Minor Program: Event Business and Entertainment

Fundamental Courses

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

Supporting Courses

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

8. Minor Program: Creative Digital Storytelling

Fundamental Courses

Course		SCU
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

Course		SCU
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 Program: Digital Banking

Fundamental Courses

Course		SCU
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

Course		SCU
MGMT6510005	Business Process Management in Banking and Finance	4
ISYS6825003	Data Analytics in Banking and Finance	4
MGMT6511005	Digital Leadership	2
	Total SCU	**10**

10. Minor Program: Blockchain Technology and Business

Fundamental Courses

Course		SCU
ISYS6826003	Introduction to Blockchain Technology	4
ISYS6827003	Blockchain Economy & Business	4
DTSC6016001	Basic Blockchain Programming	2
	Total SCU	**10**

Supporting Courses

Course		SCU
ISYS6828003	Blockchain Architecture Design and Implementation	4
DTSC6017001	Advanced Blockchain Programming	2
DTSC6018001	Prototyping Blockchain Project	4
	Total SCU	**10**

11. Minor Program: Digital Transformation
Fundamental Courses

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

Supporting Courses

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

12. Minor Program: Culinary
Fundamental Courses

Course		SCU
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

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

SCU for HTMN6155021, HTMN6125021 are practical

13. Minor Program: Digital Technopreneur
Fundamental Courses

Course		SCU
ENTR6528002	The Entrepreneurial Innovator	4
DSGN6839006	Interactive Design	4
COMM6504018	Digital Branding	2
ENPR6196002	Market Intelligence	2
COMP6687004	User Experience Design	4
DSGN6844023	Prototyping Digital Future	4
	Total SCU	20

14. Minor Program: Designpreneur
Fundamental Courses

Course		SCU
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

15. Minor Program: Metaverse in Business
Fundamental Courses

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

Supporting Courses

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

16. Minor Program: Content Creation
Fundamental Courses

Course		SCU
FILM6105009	Filmmaking Fundamental	4
MKTG6392055	Digital marketing	4
DSIN6042053	Photography for Creators	2
	Total SCU	10

Supporting Courses

Course		SCU
DSGN6990053	Creative Storytelling	4
DSIN6043053	Strategic Influence	2
DSIN6041053	Introduction to Visual Communication Design	4
	Total SCU	10

Appendix: Free Electives (4th & 5th Semester)

No	Course Owner Department	Course Code	Course Name	SCU	Semester
1	Business Creation	ENTR6580005	Digital Business Transformation	2	4
2	Business Creation	ENTR6494005	Managing GrowingBusiness	2	5
3	Business Management	MGMT6401005	Digital Supply Chain Management	2	4
4	Business Management	MKTG6298005	Service Marketing Management	2	4
5	Business Management	MGMT6365005	Current Issue in ServiceBusiness and Technology	2	5
6	International Business Management	BUSS6162005	Market Entry Strategy	2	4
7	International Business Management	MGMT6370005	E-Business for International Business	2	5
8	Management	BUSS6088005	Current Issue inBusiness and Technology	2	4
9	Management	BUSS6109005	Business Development	4	4
10	Management	BUSS6173005	Managing Innovation andKnowledge	4	4
11	Management	ISYS6079005	E-Business System	4	4
12	Management	MGMT6276005	Leadership & Managing Human Capital in Organization	4	4
13	Management	MGMT6374005	Analysis on E-BusinessInvestment	4	4
14	Management	ISYS8175005	E-Business Strategy and Implementation	4	5
15	Management	MGMT6029005	Knowledge Management	2	5
16	Management	MGMT6063005	Strategic Management	2	5
17	Management	MGMT6297005	Operations Management	4	5
18	Management	MGMT6341005	Strategic Management	4	5
19	Accounting	ACCT6358020	Management Audit	4	4
20	AccountingBekasi	ACCT6382020	Business Process Analysis and Solution	2	4
21	AccountingBekasi	ACCT6389020	Big Data Analytics in Accounting & Finance	2	5
22	Marketing Communication	COMM6541019	Digital Corporate Communication	2/2	5
23	Marketing Communication	COMM6543019	Digital Brand Communication	2/2	5
24	Tourism	TRSM6208022	Tourism Innovation andProduct Development	4	5
25	Civil Engineering	CIVL6025013	Hydrology	2	5
26	Civil Engineering	CIVL6035013	Airport Engineering	2	5
27	Civil Engineering	CIVL6037013	Railway Engineering	2	5
28	Civil Engineering	CIVL6080013	Construction Methods &Heavy Equipment	2	5

No	Course Owner Department	Course Code	Course Name	SCU	Semester
29	Civil Engineering	COMP6046013	Computer Applications inConstruction Management	2	5
30	Computer Engineering	CPEN6126010	Cross Platform Application Development	4	5
31	Computer Engineering	CPEN6225010	Telco Network & Switching System	2	5
32	Computer Engineering	CPEN6232010	Cloud TechnologyPractice	2	5
33	Food Technology	FOOD6073015	Current Issues in FoodTechnology	2	4
34	Industrial Engineering	ISYE6041011	Engineering Economy	2	4
35	Industrial Engineering	ISYE6113011	Leadership & Organizational Behaviour	2	4
36	Industrial Engineering	ISYE6181011	System Engineering &Analysis	2	4
37	ComputerScience	COMP6586001	Embedded Systems	2	5
38	ComputerScience	COMP6226001	Competitive Programming	2	5
39	ComputerScience	MOBI6059001	Mobile Programming	2	5
40	ComputerScience	COMP7116001	Computer Vision	2/2	5
41	ComputerScience	COMP6821001	Web Programming	2	5
42	ComputerScience	COMP6590001	Geographical InformationSystem	2/2	5
43	Game Application and Technology	GAME6082001	Game Animation	2	4
44	Game Application andTechnology	GAME6085001	Object Oriented Game Programming	2	5
45	Animation	DSGN6693007	Motion Graphic	4	4
46	Animation	DSGN6694007	Visual Effect (VFX)	4	4
47	Animation	DSGN6695007	Asset Creation	4	4
48	Animation	DSGN6689007	Concept Art & ProductionDesign	2	5
49	Creative Advertising	DSGN6671007	Creative Writing for Commercials	4	4
50	Film	FILM6026009	History of IndonesianCinema	2	4
51	New Media	DSGN6743007	Digital Graphic Reproduction	4	4
52	Interior Design	DSGN6611008	Business in InteriorDesign	2	4
53	Business Information Technology	ISYS6574003	Information Retrieval	4	4
54	Business Information Technology	ISYS6577003	Machine Learning & Foundations	2	4
55	Business Information Technology	ISYS6606003	Smart Application	2	4

No	Course Owner Department	Course Code	Course Name	SCU	Semester
56	Business Information Technology	ISYS6579003	Knowledge-Based AI:Cognitive Systems	4	5
57	InformationSystems	BUSS6043003	Introduction to E-Business	4	4
58	InformationSystems	ISYS6016003	Social MediaFundamental	2	4
59	InformationSystems	ISYS6203003	Mobile Application Development	2/2	4
60	InformationSystems	ISYS6210003	Data Visualization	2	4
61	InformationSystems	ISYS6285003	Digital and New Media	2	4
62	InformationSystems	ISYS6594003	Coding for Finance	2	4
63	InformationSystems	ISYS6196003	Business Analytics	2	5
64	InformationSystems	ISYS6199003	Data & Text Mining	4	5
65	InformationSystems	ISYS6202003	Social Informatics	4	5
66	InformationSystems	ISYS6289003	Collaborative Computing	4	5
67	InformationSystems	ISYS6402003	Business Analytics	2/2	5
68	InformationSystems	ISYS8066003	Business Process Management	4	5
69	Information Systems Accounting & Auditing	ISYS6608003	IT Service & Risk Management	2	5
70	Data Science	DTSC6007001	Deep Learning	2	4
71	Data Science	DTSC6008001	Text Mining	2	5
72	Cyber Security	COMP6646001	Computer Forensic	2	5
73	Mobile Application & Technology	MOBI6068001	Web Design	2	5
74	International Relations	INTR8043029	International Media andState Role	4	4
75	International Relations	INTR6162029	Multiculturalism andDigital Society	2	5
76	Business Law	LAWS6017028	Intellectual PropertyRights	4	4
77	Business Law	LAWS6110028	Cyber Law	2	4
78	Business Law	LAWS6171028	Business Competition &Consumer Protection Law	2	4
79	Business Law	LAWS6052028	Bankruptcy Law	2	5
80	Business Law	LAWS6167028	Legal Philosophy & Professional Ethics	2	5
81	Business Law	LAWS6176028	Tax Law	2	5
82	Chinese Literature	CHIN6157026	Chinese Business forEtiquette (Beginner)	4	4
83	Chinese Literature	CHIN6157026	Chinese Business forEtiquette (Beginner)	4	5

No	Course Owner Department	Course Code	Course Name	SCU	Semester
84	English Literature	ENGL6169024	English for Professionals	2	4
85	English Literature	SOCS6021024	Social and Digital MediaWriting	2	4
86	English Literature	ENGL6244024	Social Media Broadcasting	4	5
87	Primary Teacher Education	EDUC6018030	Micro Teaching	4	4
88	Primary Teacher Education	EDUC6041030	Current Issues in PrimaryEducation	2	4
89	Primary Teacher Education	EDUC6062030	International and National Curriculum	2	4
90	Primary Teacher Education	EDUC6033030	Physical Education	2	5
91	Primary Teacher Education	EDUC6061030	ICT for DistanceLearning	2	5
92	Psychology	PSYC6124027	Psychology of Early Childhood Education	4	4
93	Psychology	PSYC6125027	Psychology of SpecialNeeds Education	4	4
94	Psychology	PSYC6130027	Human PerformanceTechnology	4	4
95	Business Creation	ENTR6580005	Digital Business Transformation	2	4
96	Business Creation	ENTR6494005	Managing GrowingBusiness	2	5
97	Business Management	MGMT6401005	Digital Supply Chain Management	2	4
98	Business Management	MKTG6298005	Service Marketing Management	2	4
99	Business Management	MGMT6365005	Current Issue in ServiceBusiness and Technology	2	5
100	International Business Management	BUSS6162005	Market Entry Strategy	2	4

Enrichment Program I (6th Semester) & Enrichment Program II (7th Semester):
-) *Student will take one of enrichment program tracks (off campus). See enrichment appendix for the tracks detail.*

Enrichment Track Scheme

Track	Semester 6							Semester 7							
	IN	RS	EN	CD	SA	IS	etc	IN	RS	EN	CD	SA	IS	FS	etc
1	v							v							
2	v													v	
3		v							v						
4		v												v	

Track	Semester 6							Semester 7							
	IN	RS	EN	CD	SA	IS	etc	IN	RS	EN	CD	SA	IS	FS	etc
5			v							v					
6				v				v							
7				v							v				
8				v								v			
9				v									v		
10					v			v							
11					v						v				
12					v								v		
13						v		v							
14						v					v				
15						v						v			
16							v	v							
17							v				v				
18							v					v			

Description:
Student will take one of enrichment program tracks

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

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			
COMP6777031	Industrial Experience in Information Technology	8	20
COMP6778031	Information Technology Practice in Industrial Experience	8	
COMP6779031	EES in Information Technology Industry	4	
Enrichment Program II			
COMP6780031	Professional Experience in Information Technology		20
COMP6781031	Information Technology Practice in Professional Experience		
COMP6782031	Professional Development in Information Technology Industry		

Certified Research Track

Code	Course Name	SCU	Total
Enrichment Program I			
RSCH6389031	Research Experience I	8	20
RSCH6599031	Scientific Writing I in Computer Science	8	
RSCH6391031	Global EES I (Team Work, Communication, Problem Solving & Decision Making) in Computer Science	4	
Enrichment Program II			
RSCH6392031	Research Experience II in Computer Science	8	20
RSCH6600031	Scientific Writing II in Computer Science	8	
RSCH6394031	Global EES II (Self-Management, Planning & Organizing, Initiative & Enterprise)	4	

Certified Entrepreneurship Track

Code	Course Name	SCU	Total
Enrichment Program I			
ENPR6001031	New Venture Initiation in Computer Science	8	20
ENPR6002031	Computer Science Product Development Process	8	
ENTR6455031	EES in New Computer Science Business	4	
Enrichment Program II			
ENPR6003031	Computer Science Product Launching	8	20
ENPR6004031	Computer Science Business Development	8	
ENTR6451031	EES in Computer Science Business Experience	4	

Certified Community Development Track

Code	Course Name	SCU	Total
Enrichment Program I			
CMDV6232031	Community Outreach Project Implementation	8	20
CMDV6374031	Community Outreach IT Project Design	8	
CMDV6234031	Employability and Entrepreneurial Skills in Computer Science Community	4	
Enrichment Program II			
CMDV6235031	Community Development Project Implementation	8	20
CMDV6375031	Community Development IT Project Design	8	
CMDV6237031	Employability and Entrepreneurial Skills in Computer Science Community Development	4	

Certified Study Abroad Track

Code	Course Name	SCU	Total
Enrichment Program I			
GLOB6208031	Elective Course for Study Abroad 1	4	
GLOB6209031	Elective Course for Study Abroad 2	4	
GLOB6210031	Elective Course for Study Abroad 3	4	
GLOB6211031	Elective Course for Study Abroad 4	4	
GLOB6268031	Elective Course for Study Abroad 25	4	
GLOB6208031	Elective Course for Study Abroad 1	4	
GLOB6209031	Elective Course for Study Abroad 2	4	
GLOB6210031	Elective Course for Study Abroad 3	4	
GLOB6212031	Elective Course for Study Abroad 5	2	20
GLOB6213031	Elective Course for Study Abroad 6	2	
GLOB6214031	Elective Course for Study Abroad 7	2	
GLOB6215031	Elective Course for Study Abroad 8	2	
GLOB6216031	Elective Course for Study Abroad 9	2	
GLOB6217031	Elective Course for Study Abroad 10	2	
GLOB6218031	Elective Course for Study Abroad 11	2	
GLOB6219031	Elective Course for Study Abroad 12	2	
GLOB6269031	Elective Course for Study Abroad 26	2	
GLOB6289031	Elective Course for Study Abroad 29	2	
Enrichment Program II			
GLOB6220031	Elective Course for Study Abroad 13	4	
GLOB6221031	Elective Course for Study Abroad 14	4	
GLOB6222031	Elective Course for Study Abroad 15	4	
GLOB6223031	Elective Course for Study Abroad 16	4	
GLOB6270031	Elective Course for Study Abroad 27	4	
GLOB6224031	Elective Course for Study Abroad 17	2	
GLOB6225031	Elective Course for Study Abroad 18	2	
GLOB6226031	Elective Course for Study Abroad 19	2	
GLOB6227031	Elective Course for Study Abroad 20	2	
GLOB6228031	Elective Course for Study Abroad 21	2	
GLOB6229031	Elective Course for Study Abroad 22	2	
GLOB6230031	Elective Course for Study Abroad 23	2	
GLOB6231031	Elective Course for Study Abroad 24	2	
GLOB6271031	Elective Course for Study Abroad 28	2	
GLOB6218031	Elective Course for Study Abroad 11	2	
GLOB6219031	Elective Course for Study Abroad 12	2	
GLOB6269031	Elective Course for Study Abroad 26	2	
GLOB6289031	Elective Course for Study Abroad 29	2	

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

Certified Specific Indenpendent Study Track

Code	Course Name	SCU	Total
Elective courses list for Specific Indenpendent Study*			
Enrichment Program I/II			
MICR6073031	Course Certification I	3	
MICR6074031	Technical Skill Enrichment I	4	
MICR6075031	Industrial Project I	9	
MICR6076031	Soft Skill Enrichment I	4	
MICR6077031	Elec Course for Specific Independent Study 1	8	
MICR6078031	Elec Course for Specific Independent Study 2	8	
MICR6079031	Elec Course for Specific Independent Study 3	6	
MICR6080031	Elec Course for Specific Independent Study 4	6	
MICR6081031	Elec Course for Specific Independent Study 5	6	
MICR6082031	Elec Course for Specific Independent Study 6	5	
MICR6083031	Elec Course for Specific Independent Study 7	5	
MICR6084031	Elec Course for Specific Independent Study 8	5	
MICR6085031	Elec Course for Specific Independent Study 9	5	
MICR6086031	Elec Course for Specific Independent Study 10	4	
MICR6087031	Elec Course for Specific Independent Study 11	4	
MICR6088031	Elec Course for Specific Independent Study 12	4	
MICR6089031	Elec Course for Specific Independent Study 13	4	20
MICR6090031	Elec Course for Specific Independent Study 14	4	
MICR6091031	Elec Course for Specific Independent Study 15	3	
MICR6092031	Elec Course for Specific Independent Study 16	3	
MICR6093031	Elec Course for Specific Independent Study 17	3	
MICR6094031	Elec Course for Specific Independent Study 18	3	
MICR6095031	Elec Course for Specific Independent Study 19	3	
MICR6096031	Elec Course for Specific Independent Study 20	3	
MICR6097031	Elec Course for Specific Independent Study 21	2	
MICR6098031	Elec Course for Specific Independent Study 22	2	
MICR6099031	Elec Course for Specific Independent Study 23	2	
MICR6100031	Elec Course for Specific Independent Study 24	2	
MICR6101031	Elec Course for Specific Independent Study 25	2	
MICR6102031	Elec Course for Specific Independent Study 26	2	
MICR6103031	Elec Course for Specific Independent Study 27	2	
MICR6104031	Elec Course for Specific Independent Study 28	2	
MICR6105031	Elec Course for Specific Independent Study 29	1	
MICR6106031	Elec Course for Specific Independent Study 30	1	
MICR6107031	Elec Course for Specific Independent Study 31	1	
MICR6108031	Elec 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
Enrichment Program II
Fast track M.MSI

Code	Course Name	SCU	Total
Enrichment Program II			
ISYS6654031	Service Oriented Analysis and Design	4	20
ISYS6655031	Change Management for Enterprise	4	
ISYS6656031	Digital Transformation Management	4	
ISYS6657031	Data Analytics for Research	4	
ISYS6660031	Visualization and Descriptive Analytics	4	

Fast track M.TI

Code	Course Name	SCU	Total
Enrichment Program II			
COMP6815031	IT Disaster Recovery	4	20
COMP6816031	Wireless and Cloud Computing Technologies	4	
COMP6817031	Internet Tools and Services	4	
COMP6818031	Cyber Risk Management	4	
COMP6819031	Knowledge Engineering	4	

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

No	Course Code	Course Name	Minimal Grade
1.	CHAR6034031	Character Building: Pancasila	B
2.	ENTR6524032	Entrepreneurship: MarketValidation	C
3.	COMP6421031	Algorithm and Programming	C
4.	COMP6458031	Data Structures	C
5.	COMP6839031	Program Design Methods	C
6.	COMP6466031	Software Engineering	C
7.	COMP6847031	Database Technology	C
8.	COMP6716031	Operating System	C