

# CHED CMO 25 Series of 2015 Revised Policies, Standards, and Guidelines for BSCS, BSIS, and BSIT Programs with sample curricula

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# Section 8 Curriculum (pre K12)

	BSCS	BSIS	BSIT
<b>General Education</b>	54.0	54.0	54.0
<b>Common Courses</b>	18.0	18.0	18.0
<b>Professional Courses</b>	48.0	48.0	48.0
<b>Professional Electives</b>	9.0	12.0	12.0
<b>Advanced Math Requirement</b>	3.0	0.0	0.0
<b>PE</b>	8.0	8.0	8.0
<b>NSTP</b>	6.0	6.0	6.0
<b>Minimum Total Units</b>	<b>146.0</b>	<b>146.0</b>	<b>146.0</b>

# common courses



- The common courses for the BSCS, BSIS, and BSIT:
  - ▣ Introduction to Computing
  - ▣ Computer Programming 1 (Fundamentals of Programming)
  - ▣ Computer Programming 2 (Intermediate Programming)
  - ▣ Data Structures and Algorithms
  - ▣ Information Management
  - ▣ Applications Development and Emerging Technologies

# Section 23 Revised GE



- When the k-12 is implemented, the new GE (CMO 20, series of 2013) comprising 36 units will replace the old GE of 54 units.
- The balance of 18 units may be replaced by professional/ domain courses in each of the three (3) programs (CS, IS and IT) as long as the minimum total number of units is satisfied as articulated in Section 8.1.

# Curriculum after K-12

	BSCS	BSIS	BSIT
<b>General Education</b>	36.0	36.0	36.0
<b>Common Courses</b>	18.0	18.0	18.0
<b>Professional Courses</b>	48.0	48.0	48.0
<b>Professional Electives</b>	9.0	12.0	12.0
<b>Advanced Math Requirement</b>	3.0	0.0	0.0
<b>Additional Professional or Domain Courses</b>	18.0	18.0	18.0
<b>PE</b>	8.0	8.0	8.0
<b>NSTP</b>	6.0	6.0	6.0
<b>Minimum Total Units</b>	<b>146.0</b>	<b>146.0</b>	<b>146.0</b>

## □ Curriculum (CMO 25 2015) pre K-12

	<b>BSIS</b>
<b>General Education</b>	<b>54.0</b>
<b>Common Courses</b>	<b>18.0</b>
<b>Professional Courses</b>	<b>48.0</b>
<b>Professional Electives</b>	<b>12.0</b>
<b>Advanced Math Requirement</b>	<b>0.0</b>
<b>PE</b>	<b>8.0</b>
<b>NSTP</b>	<b>6.0</b>
<b>Minimum Total Units</b>	<b>146.0</b>

## □ Curriculum after K-12 implementation

	<b>BSIS</b>
<b>General Education</b>	36.0
<b>Common Courses</b>	18.0
<b>Professional Courses</b>	48.0
<b>Professional Electives</b>	12.0
<b>Additional Professional or Domain Courses (Professional Track)</b>	18
<b>PE</b>	8.0
<b>NSTP</b>	6.0
<b>Minimum Total Units</b>	<b>146.0</b>

# Computing common courses



- The common courses for the BSCS, BSIS, and BSIT:
  - ▣ Introduction to Computing (CC 101)
  - ▣ Computer Programming 1 (Fundamentals of Programming) (CC 102)
  - ▣ Computer Programming 2 (Intermediate Programming) (CC 103)
  - ▣ Data Structures and Algorithms (CC 104)
  - ▣ Information Management (CC 105)
  - ▣ Applications Development and Emerging Technologies (CC 106)



## Section 8.2

### Specific Description of Program Curricula

- **Bachelor of Science in Information Technology (BSIT)**
  - ▣ The Information Technology curriculum includes basic and advanced courses on planning, development, integration, and management of information technology infrastructure that provide computing solutions to address the needs of organizations.
  - ▣ The curriculum should include courses that cover Knowledge Areas as recommended in ACM Information Technology Curricula 2008
  - ▣ 11 Knowledge Areas have been specified in the PSG

# Information Technology Knowledge Areas



1. Information Technology Fundamentals
2. Human Computer Interaction
3. Information Assurance and Security
4. Information Management
5. Integrative Programming and Technologies
6. Networking
7. Platform Technologies
8. Systems Administration and Maintenance
9. Systems Integration and Architecture
10. Social and Professional Issues
11. Web Systems and Technologies

## Section 8.2 Specific Description of Program Curricula



### □ **Bachelor of Science in Information Systems (BSIS)**

- The Information Systems curriculum encompasses introductory and professional courses to cover the various information systems functional areas
- In addition, the curriculum shall include business enterprise domain courses
- 7 IS Functional Areas are enumerated in the PSG

# Information Systems Knowledge Areas



1. Fundamentals of IS
2. Professional Issues in Information Systems
3. IT Infrastructure and Network Technologies
4. Systems Analysis, Design and Development
5. Enterprise Architectures
6. IS Project Management
7. IS Strategy, Management and Acquisition

## Section 8.2 Specific Description of Program Curricula

### ■ **Bachelor of Science in Computer Science (BSCS)**

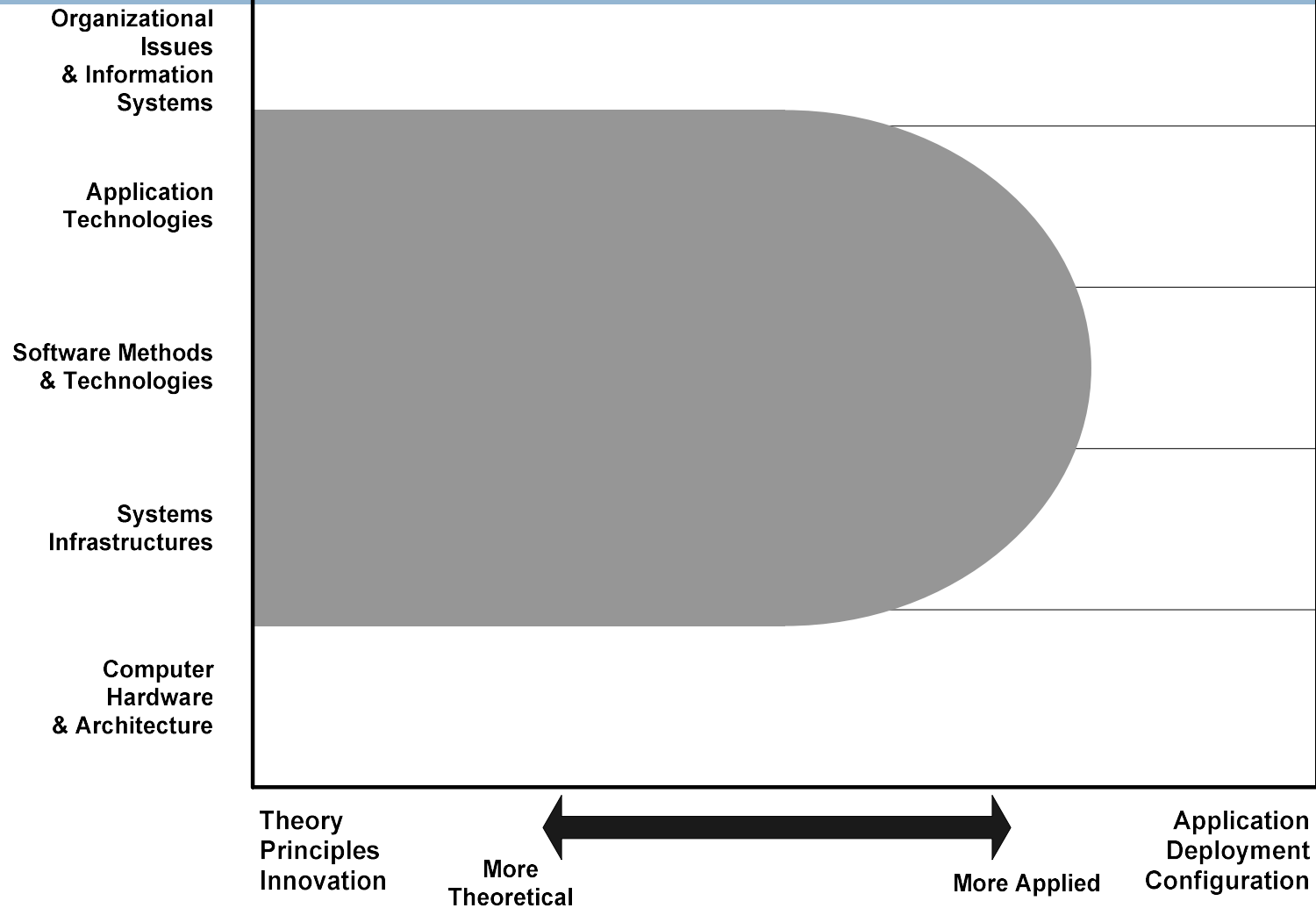
- The Computer Science curriculum includes foundation and professional courses that cover theory, algorithms, software design and development, and new developments in computing.
- The curriculum should include courses to cover Knowledge Areas recommended in ACM Computer Science Curricula 2013 (enumerated in PSG)
- 11 Knowledge Areas have been specified

# Computer Science Knowledge Areas



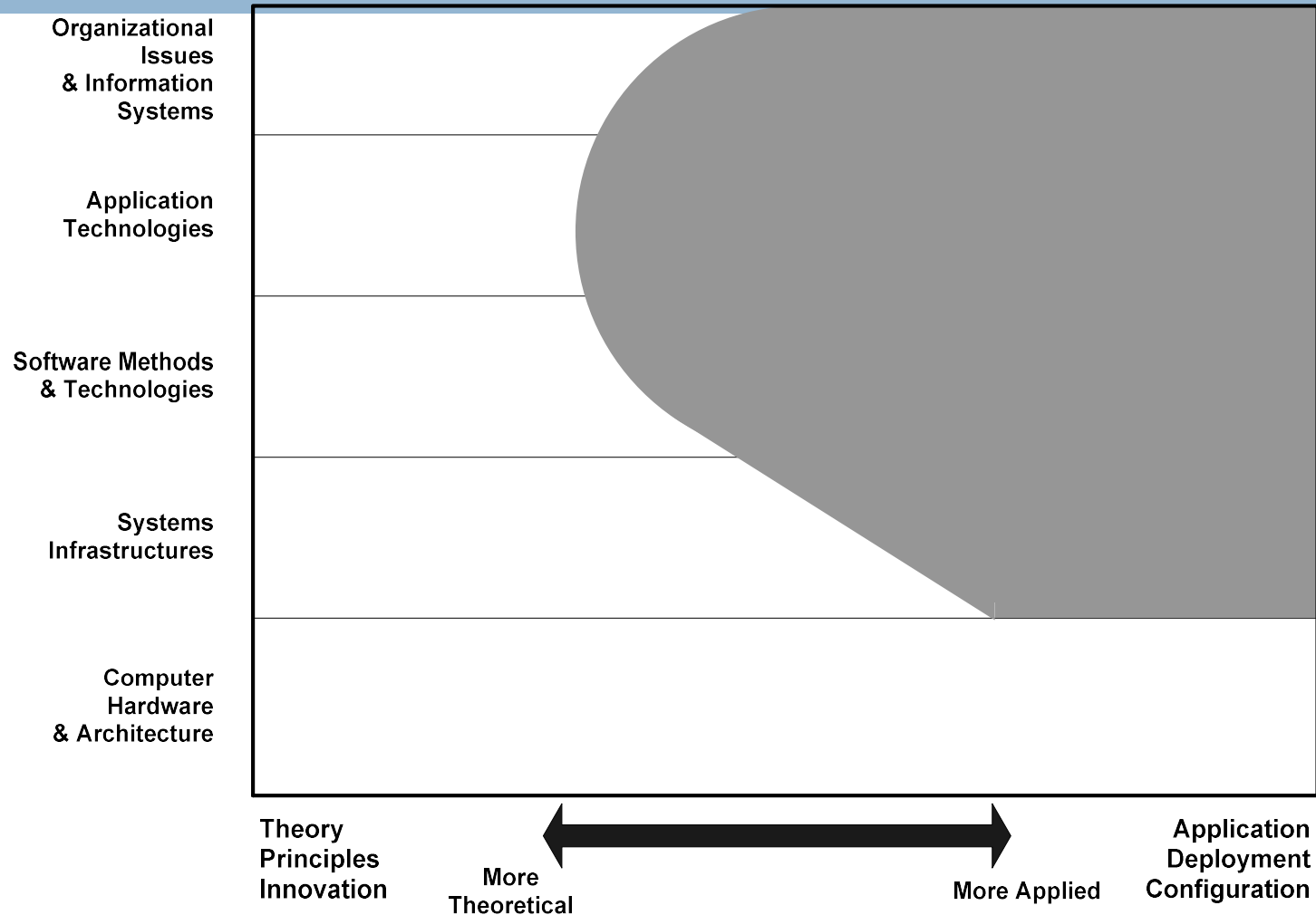
1. Algorithms and Complexity
2. Architecture and Organization
3. Discrete Structures
4. Human Computer interaction
5. Information Assurance and Security
6. Networks and Communications
7. Operating Systems
8. Programming Languages (Design and Implementation)
9. Software Development Fundamentals
10. Software Engineering
11. Social Issues and Professional Practice

# Computer Science



**CS**

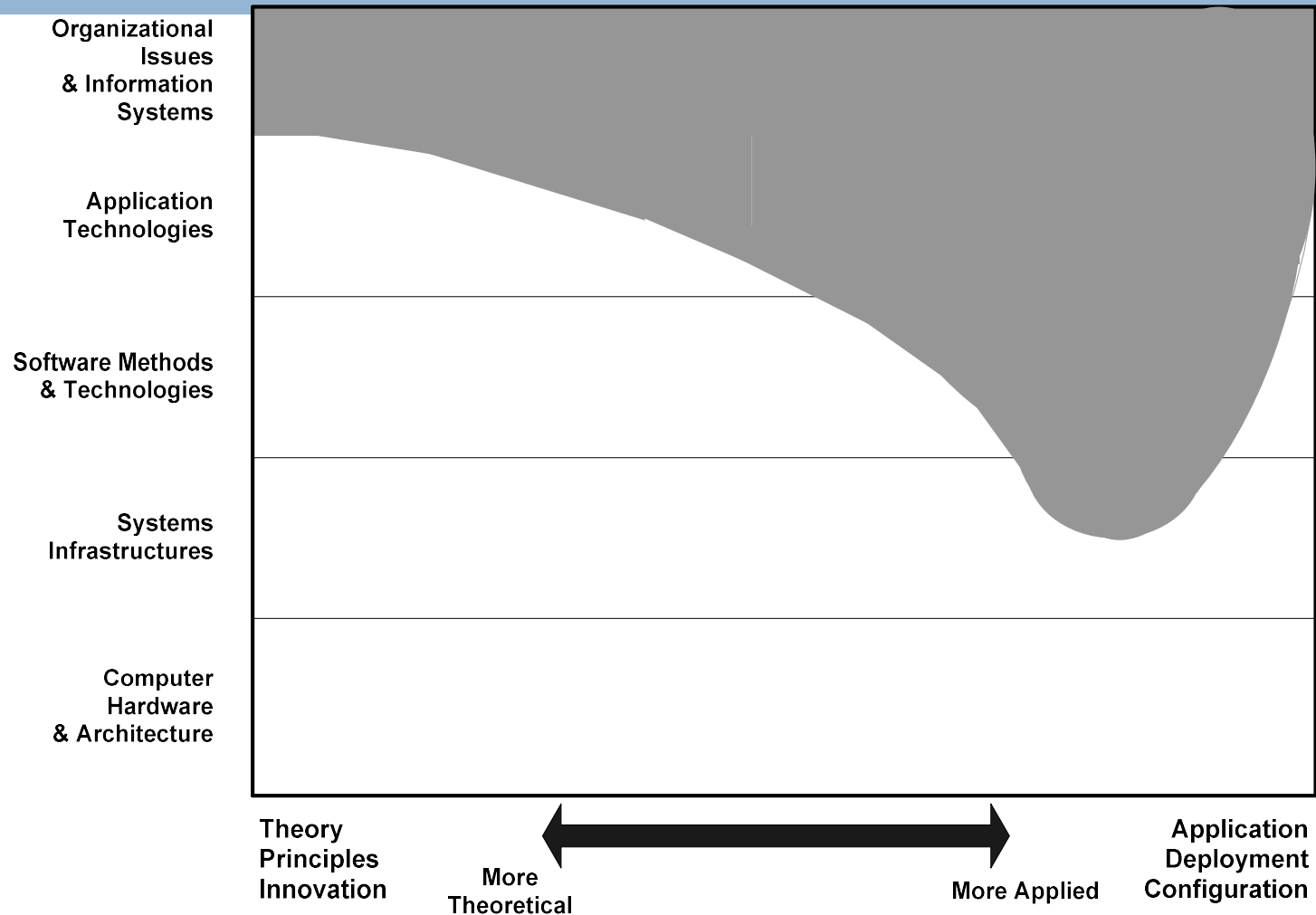
# Information Technology



**IT**



# Information Systems



**IS**

# Bachelor of Science in Computer Science (BSCS)



- **Primary Job Roles**
- Software Engineer
- Systems Software Developer
- Research and Development computing professional
- Applications Software Developer
- Computer Programmer

# Bachelor of Science in Information Systems (BSIS)



- **Primary Job Roles**
- Organizational Process Analyst
- Data Analyst
- Solutions Specialist
- Systems Analyst
- IS Project Management Staff

# Bachelor of Science in Information Technology (BSIT)




-  **Primary Job Roles**
-  Web and Applications Developer
-  Junior Database Administrator
-  Systems Administrator
-  Network Engineer
-  Junior Information Security Administrator
-  Systems Integration Trainee
-  IT Audit Assistant
-  Technical Support Specialist

# BSIS Recommended Professional Electives




ADV01	Enterprise Systems
ADV02	Human Computer Interaction
ADV03	IT Audit and Controls
ADV04	IS Innovations and New Technologies
ADV05	IT Security and Management 1
ADV06	IT Service Management
ADV07	IS Project Management 2
ADV08	Data Mining
ADV09	Business Intelligence

# BSIT Recommended Professional Electives



IPT102	Integrative Programming Technologies 2
PT101	Platform Technologies 3
WS101	Web Systems and Technologies
PF101	Object-Oriented Programming
SIA102	Systems Integration and Architecture 2
HCI102	Human Computer Interaction 2

# BSCS Recommended Professional Electives



CN101	Computational Science
GV101	Graphics and Visual Computing
PD101	Parallel and Distributed Computing
IS101	Intelligent Systems
SF101	System Fundamentals

# Recommended Professional/ Specialization Tracks (18) (post K12)

- Business Analytics
  - Fundamentals of Business Analytics
  - Enterprise Data Management
  - Analytics Modeling
  - Analytics Technique and Tools
  - Data Mining
  - Internship
- Service Management
  - Fundamentals of Business Outsourcing 1
  - Fundamentals of Business Outsourcing 2
  - Business Communication
  - Service Culture
  - Principles of Systems Thinking
  - Practicum/ OJT



# Recommended Professional/ Specialization Tracks (18) (2)



- Information Security and Risk Management
  - ▣ IT Security and Management 2
  - ▣ IT Audit and Controls
  - ▣ Internship
  
- Data Mining
  - ▣ Advance Statistics
  - ▣ Data Preparation
  - ▣ Logistic Regression
  - ▣ Regression Analysis
  - ▣ Data Mining Methodology

# A Peek at CMO 20 2013 (Gen Ed)



- 36 courses
  - ▣ 24 units for core
  - ▣ 3 units for Rizal
  - ▣ 9 units for Electives

# A Peek at CMO 20 2013 (Gen Ed)

## □ Core

Understanding the Self (New)

Readings in Philippine History (History)

The Contemporary World (New)

Mathematics in the Modern World (Math)

Purposive Communication (English 1)

Art Appreciation (Humanities, English 2)

Science and Technology (New)

Ethics (New)

# A Peek at CMO 20 2013 (Gen Ed)



- Gen Ed Electives Domain Areas (intersect any 2)
  - ▣ Social Sciences and Philosophy
  - ▣ Mathematics, Science and Technology
  - ▣ Arts and Humanities
- Sample Gen ED Electives
  - ▣ Living in the IT Era
  - ▣ Reading Visual Arts
  - ▣ Technopreneurship



# Sample BSIT Curriculum

# Sample BSIT Curriculum

FIRST YEAR		FIRST SEMESTER	
FG	COURSE NO.	DESCRIPTION	UNITS
	COMP1	Introduction to Computing	3
	PROG1	Computer Programming 1	3
	REED 1	Revelation and Faith	(3)
	PE 1	Physical Fitness	2
	GE1	Mathematics in the Modern World	3
	GE2	Understanding the Self	3
	Math Prep	Pre-Calculus for Non-STEM (Algebra and Trigo)	(3)
	FILIPINO 1	Komunikasyon sa Akademikong Filipino	3
	ROTC/CWTS 1 1	Basic Army Science/Civic Welfare Training Service	3
	GUIDANCE 1	Adjustment to College Life Phase 1	0
			20

# Sample BSIT Curriculum

FIRST YEAR		SECOND SEMESTER	
FG	COURSE NO.	DESCRIPTION	UNITS
	DISCRETE 1	Discrete Structures 1	3
	PROG2	Computer Programming 2	3
	WEB	Web Development	3
	GE3	Readings in Philippine History	3
	GE4	Purposive Communication	3
	REED 2	Christology	(3)
	PE 2	Rhythmic Activities	2
	FILIPINO 2	Pagbasa at Pagsulat tungo sa Pananaliksik	3
	ROTC/CWTS/N STP 12	Reserved Officer Training Corps/Civic Welfare Training Service	3
	GUIDANCE 2	Adjustment to College Life Phase 2	0
			23

# Sample BSIT Curriculum

## SECOND YEAR

## FIRST SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	DATASTRUCT 1	Data Structures and Algorithms	3
	DIGITAL 1	Digital Logic Design	3
	PT	Platform Technologies	3
	ACCTG A	Fundamentals of Accounting	3
	GE5	The Contemporary World	3
	GE6	Art Appreciation	3
	GEEL1	Living in the IT Era	3
	PE 3	Individual/Dual Sports/Games	2
			23



# Sample BSIT Curriculum

## SECOND YEAR

## SECOND SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	OOP1	Object Oriented Programming	3
	IM 1	Information Management	3
	NET 1	Data Communications and Networking 1	3
	MATH 7	Statistics and Probabilities	3
	GE7	Science and Technology	3
	GEEL2	Reading Visual Arts	3
	PE 4	Team Sports/Games	2
			20

# Sample BSIT Curriculum

## SECOND YEAR

## SUMMER

FG	COURSE NO.	DESCRIPTION	UNITS
	SP	Social Issues and Professional Practice	3
	QM	Quantitative Methods	3
	HCI	Human Computer Interaction	3
			9

# Sample BSIT Curriculum

## THIRD YEAR

## FIRST SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	IM 2	Information Management 2	3
	NET 2	Networking 2	3
	IT ELEC 1	IT Elective 1	3
	APPSDEV 1	Applications Development 1	3
	SAD	System Analysis and Design	3
	OS	Operating Systems	3
	IT PROF EL 1	IT Professional Elective 1	3
	IT PROF EL 2	IT Professional Elective 2	3
			24

# Sample BSIT Curriculum

## THIRD YEAR

## SECOND SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	IAS1	Information Assurance and Security	3
	IT ELEC 2	IT Elective 2	3
	SIA 1	System Integration and Architecture 1	3
	RESEARCH 1	Methods of Research in Computing	3
	IM 3	Fundamentals of Data Warehousing and Data Mining	3
	IT PROF EL 3	IT Professional Elective 3	3
	IT PROF EL 3	IT Professional Elective 3	3
	TECHNO	Technopreneurship	3
			24

# Sample BSIT Curriculum

## THIRD YEAR

## SUMMER

FG	COURSE NO.	DESCRIPTION	UNITS
	IPT 1	Integrative Programming and Technologies	3
	IT ELEC 3	IT Elective 3	3
	CAPSTONE 1	Capstone Project 1	3
			9

# Sample BSIT Curriculum

## FOURTH YEAR

## FIRST SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	SA	Systems Administration and Maintenance	3
	CAPSTONE 2	Capstone Project 2	3
	ITREVIEW	Certification Exam Review	3
	RIZAL	Life, Works and Writings of Dr. Jose Rizal	3
	IT PROF EL 4	IT Professional Elective 4	3
			15

# Sample BSIT Curriculum

## FOURTH YEAR

## SECOND SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	PRAC	Practicum	6
	SEMTOUR	Seminars and Tours	3
			<b>9</b>



# Sample BSIS Curriculum



# Sample BSIS Curriculum

FIRST YEAR		FIRST SEMESTER	
FG	COURSE NO.	DESCRIPTION	UNITS
	COMP 1	Introduction to Computing	3
	PROG1	Computer Programming 1	3
	GE1	Mathematics in the Modern World	3
	GE2	Understanding the Self	3
	Math Prep	Pre-Calculus for Non-STEM (Algebra and Trigo)	(3)
	REED 1	Revelation and Faith	(3)
	PE 1	Physical Fitness	2
	ROTC/CWTS/NSTP 11	Reserved Officer Training Corps/Civic Welfare Training Service	3
	FILIPINO 1	Komunikasyon sa Akademikong Filipino	3
	GUIDANCE 1	Adjustment to College Life Phase 1	0
			20

# Sample BSIS Curriculum

FIRST YEAR		SECOND SEMESTER	
FG	COURSE NO.	DESCRIPTION	UNITS
	IS	Fundamentals of Information Systems	3
	PROG2	Computer Programming 2	3
	WEB	Web Development	3
	GE3	Readings in Philippine History	3
	GE4	Purposive Communication	3
	REED 2	Christology	(3)
	PE 2	Rhythmic Activities	2
	FILIPINO 2	Pagbasa at Pagsulat tungo sa Pananaliksik	3
	ROTC/CWTS/N STP 12	Reserved Officer Training Corps/Civic Welfare Training Service	3
	GUIDANCE 2	Adjustment to College Life Phase 2	0
			23

# Sample BSIS Curriculum

## SECOND YEAR

## FIRST SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	DATASTRUCT 1	Data Structures and Algorithms	3
	PT	Platform Technologies	3
	DM 1	Organization and Management Concepts	3
	ACCTG A	Fundamentals of Accounting	3
	GE5	The Contemporary World	3
	GE6	Art Appreciation	3
	GEEL1	Living in the IT Era	3
	PE 3	Individual/Dual Sports/Games	2
			23

# Sample BSIS Curriculum

## SECOND YEAR

## SECOND SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	HCI	Human Computer Interaction	3
	DM 2	Financial Management	3
	IM 1	Information Management 1	3
	NET 1	Data Communications and Networking 1	3
	MATH 7	Statistics and Probabilities	3
	GE7	Science and Technology	3
	GEEL2	Reading Visual Arts	3
	PE 4	Team Sports/Games	2
			23

# Sample BSIS Curriculum

## THIRD YEAR

## FIRST SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	DM 3	Business Process Management	3
	SAD	System Analysis and Design	3
	QM	Quantitative Methods	3
	IS ELEC 1	IS Elective 1	3
	APPSDEV 1	Application Development and Emerging Technologies 1	3
	IS PROF EL 1	IS Professional Elective 1	3
	IS PROF EL 2	IS Professional Elective 2	3
			21

# Sample BSIS Curriculum

## THIRD YEAR

## SECOND SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	CAPSTONE 1	Capstone Project 1	3
	PROJMGT 1	IS Project Management 1	3
	IS ELEC 2	IS Elective 2	3
	APPSDEV 2	Application Development and Emerging Technologies 2	3
	RESEARCH	Methods of Research in Computing	3
	IS PROF EL 3	IS Professional Elective 3	3
	GE 8	Ethics	3
			21

# Sample BSIS Curriculum

## THIRD YEAR

## SUMMER

FG	COURSE NO.	DESCRIPTION	UNITS
	STRATMGT	IS Strategy, Management and Acquisition	3
	IS ELEC 3	IS Elective 3	3
	SP	Social Issues and Professional Practice	3
			9

# Sample BSIS Curriculum

## FOURTH YEAR

## FIRST SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	PROJMGT 2	IS Project Management 2	3
	CAPSTONE 2	Capstone Project 2	3
	IS ELEC 4	IS Elective 4	3
	IS PROF EL 4	IS Professional Elective 4	3
	TECHNO	Technopreneurship	3
	RIZAL	Life, Works and Writings of Dr. Jose Rizal	3
	FL	Foreign Language	3
			21



# Sample BSIS Curriculum

## FOURTH YEAR

## SECOND SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	PRAC	Practicum	6
	SEMTOUR	Seminars and Tours	3
			9



# Sample BSCS Curriculum

# Sample BSCS Curriculum

FIRST YEAR		FIRST SEMESTER	
FG	COURSE NO.	DESCRIPTION	UNITS
	COMP1	Introduction to Computing	3
	PROG1	Computer Programming 1	3
	GE1	Mathematics in the Modern World	3
	GE2	Understanding the Self	3
	Math Prep	Pre-Calculus for Non-STEM (Algebra and Trigo)	(3)
	REED 1	Revelation and Faith	(3)
	PE 1	Physical Fitness	2
	ROTC/CWTS/NSTP 11	Reserved Officer Training Corps/Civic Welfare Training Service	3
	FILIPINO 1	Komunikasyon sa Akademikong Filipino	3
	GUIDANCE 1	Adjustment to College Life Phase 1	0
			20

# Sample BSCS Curriculum

FIRST YEAR		SECOND SEMESTER	
FG	COURSE NO.	DESCRIPTION	UNITS
	DISCRETE 1	Discrete Structures 1	3
	PROG2	Computer Programming 2	3
	WEB 1	Web Development	3
	GE3	Readings in Philippine History	3
	GE4	Purposive Communication	3
	REED 2	Christology	(3)
	PE 2	Rhythmic Activities	2
	FILIPINO 2	Pagbasa at Pagsulat tungo sa Pananaliksik	3
	ROTC/CWTS/N STP 12	Reserved Officer Training Corps/Civic Welfare Training Service	3
	GUIDANCE 2	Adjustment to College Life Phase 2	0
			23

# Sample BSCS Curriculum

SECOND YEAR		FIRST SEMESTER	
FG	COURSE NO.	DESCRIPTION	UNITS
	DISCRETE 2	Discrete Structures 2	3
	DATASTRUCT 1	Data Structures and Algorithms	3
	DIGITAL 1	Digital Logic Design	3
	ACCTG A	Fundamentals of Accounting	3
	GE5	The Contemporary World	3
	GE6	Art Appreciation	3
	GEEL1	Living in the IT Era	3
	PE 3	Individual/Dual Sports/Games	2
			23

# Sample BSCS Curriculum

## SECOND YEAR

## SECOND SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	ALGO 1	Analysis and Design of Algorithms	3
	OOP1	Object Oriented Programming	3
	IM 1	Information Management	3
	COMP-ORG 1	Computer Organization and Architecture	3
	MATH 7	Statistics and Probabilities	3
	GE7	Science and Technology	3
	GEEL2	Reading Visual Arts	3
	PE 4	Team Sports/Games	2
			23

# Sample BSCS Curriculum

SECOND YEAR		SUMMER	
FG	COURSE NO.	DESCRIPTION	UNITS
	QM	Quantitative Methods	3
	SP	Social Issues and Professional Practice	3
	HCI	Human Computer Interaction	3
			9

# Sample BSCS Curriculum

## THIRD YEAR

## FIRST SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	<b>AUTOMATA 1</b>	<b>Automata Theory and Formal Languages</b>	<b>3</b>
	<b>NET 1</b>	<b>Data Communications and Networking</b>	<b>3</b>
	<b>CS ELEC 1</b>	<b>Intelligent Systems</b>	<b>3</b>
	<b>SOFTENG1</b>	<b>Software Engineering 1</b>	<b>3</b>
	<b>APPSDEV 1</b>	<b>Applications Development 1</b>	<b>3</b>
	<b>OS</b>	<b>Operating Systems</b>	<b>3</b>
	<b>CS PROF EL 1</b>	<b>CS Professional Elective 1</b>	<b>3</b>
	<b>CS PROF EL 2</b>	<b>CS Professional Elective 2</b>	<b>3</b>
			<b>24</b>



# Sample BSCS Curriculum

## THIRD YEAR

## SECOND SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	PL1	Programming Languages	3
	SOFTENG 2	Software Engineering 2	3
	CS ELEC 2	Graphics and Visual Computing	3
	APPSDEV 2	Applications Development 2	3
	RESEARCH 1	Methods of Research in Computing	3
	CS PROF EL 3	CS Professional Elective 3	3
	TECHNO	Technopreneurship	3
	GE 8	Ethics	3
			24

# Sample BSCS Curriculum

**THIRD YEAR**

**SUMMER**

FG	COURSE NO.	DESCRIPTION	UNITS
	PRAC 1	Practicum	3
			3

# Sample BSCS Curriculum

## FOURTH YEAR

## FIRST SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	<b>CS ELEC 3</b>	<b>Natural Language Processing</b>	<b>3</b>
	<b>THESIS 1</b>	<b>Thesis Writing 1</b>	<b>3</b>
	<b>ITREVIEW</b>	<b>Certification Exam Review</b>	<b>3</b>
	<b>RIZAL 1</b>	<b>Life, Works and Writings of Dr. Jose Rizal</b>	<b>3</b>
	<b>CS PROF EL 4</b>	<b>CS Professional Elective 4</b>	<b>3</b>
			<b>15</b>

# Sample BSCS Curriculum

## FOURTH YEAR

## SECOND SEMESTER

FG	COURSE NO.	DESCRIPTION	UNITS
	IAS1	Information Assurance and Security	3
	THESIS 2	Thesis Writing 2	3
	SEMTOUR	Seminars and Tours	3
			9



End