

**UNIVERSITY OF THE PHILIPPINES MINDANAO**

**BACHELOR OF SCIENCE IN COMPUTER SCIENCE Curriculum (2018)**

**First Year First Semester**

Course	Subject	Units	Pre-requisites
CMSC 3	Introduction to Web Design	3	
CMSC 10	Introduction to Computer Science	3	
CMSC 56	Discrete Mathematical Structures in Computer Science I	3	Co-req: MATH 17
CMSC 18	Computer Programming I	3	
MATH 17	Algebra and Trigonometry	5	
GE 1		3	
PE 1		(2)	
NSTP 1		(3)	
		<b>20</b>	

**First Year Second Semester**

Course	Subject	Units	Pre-requisites
CMSC 130	Logic Design and Digital Computer Circuits	3	CMSC 56
CMSC 126	Web-based System Development	3	CMSC 3, CMSC 18
CMSC 57	Discrete Mathematical Structures in Computer Science II	3	CMSC 56
CMSC 28	Computer Programming II	3	CMSC 10, CMSC 18
MATH 26	Analytic Geometry and Calculus I	3	MATH 14 / MATH 17
STAT 1	Elementary Statistics	3	MATH 11 / MATH 17
PE 2/3		(2)	
NSTP 2		(3)	

**Second Year First Sem**

Course	Subject	Units	Pre-requisites
CMSC 122	Data Structures and Applications	3	CMSC 57, CMSC 18
CMSC 133	Computer Organization and Architecture with Assembly Language Programming	3	CMSC 130, CMSC 18
AMAT 131	Statistical Methods and Experimental Design	3	STAT 1
MATH 27	Analytic Geometry and Calculus II	3	MATH 26
GE 2		3	
GE 3		3	
PE 2/3/4		(2)	
		<b>18</b>	

**Second Year Second Semester**

Course	Subject	Units	Pre-requisites
CMSC 127	File Processing and Database Systems	3	CMSC 122 / COI
CMSC 125	Operating System	3	(CMSC 122, CMSC 133) / COI
CMSC 124	Design and Implementation of Programming Languages	3	CMSC 122 / COI
CMSC 142	Design and Analysis of Algorithms	3	CMSC 122
MATH 28	Analytic Geometry and Calculus III	3	MATH 27
GE 4		3	
PE 2/3/4		(2)	
		<b>18</b>	

**Third Year First Semester**

Course	Subject	Units	Pre-requisites
CMSC 128	Introduction to Software Engineering I	3	(CMSC 126, CMSC 127) / COI
CMSC 173	Introduction to Nature-Inspired Computing	3	CMSC 142
CMSC 185	Information Security and Risk Management	3	CMSC 127
CMSC 193	Introduction to Technopreneurship	3	CMSC 127
GE 5		3	
GE 6		3	
		<b>18</b>	

**Third Year Second Semester**

Course	Subject	Units	Pre-requisites
CMSC 186	Web Services and Service-Oriented Architecture	3	CMSC 128
CMSC 137	Data CommunicationS and Networking	3	CMSC 125
CMSC 141	Automata and Languages Theory	3	CMSC 124
Qualified Elective1		3	
NSM 192	Scientific Research Process	3	STAT 1, Junior Standing
CMSC 200a	Undergraduate Thesis	2	COI, Co-req.: NSM 192
GE 7		3	
		<b>20</b>	

**Third Year Summer**

Course	Subject	Units	Pre-requisites
CMSC 198	Practicum	3	COI

**Fourth Year First Semester**

Course	Subject	Units	Pre-requisites
CMSC 199	Undergraduate Seminar	1	COI
Qualified Elective2		3	
Qualified Elective3		3	
FREE Elective1		3	
CMSC 200b	Undergraduate Thesis	2	COI
GE 8		3	
GE 9		3	
		<b>18</b>	

**Fourth Year Second Semester**

Course	Subject	Units	Pre-requisites
Qualified Elective4		3	
Qualified Elective5		3	
FREE Elective2		3	
CMSC 200c	Undergraduate Seminar	2	COI
PI 100	Life and Works of Rizal	3	Junior Standing
GE 10		3	
		<b>17</b>	

**Total Units: 150**

Required GE: STS 1, MinStud 1, MATH 10, KAS 1, ARTS 1, ETHICS 1,  
Free Electives (6 units) any two 3-unit courses offered by the University provided approved by the Adviser.  
Junior Standing = earned total of 76 units

Qualified Electives offered by the Department:

Course #	Subject	Pre-requisites
CMSC 129	Principles of Compiler Design	CMSC 124
CMSC 134	Information Storage Management	CMSC 133, CMSC 18
CMSC 150	Numerical and Symbolic Computations	MATH 28 / MATH 38, CMSC 123
CMSC 161	Interactive Computer Graphics	CMSC 123, MATH 120
CMSC 162	Introduction to Image and Video Processing	CMSC 122 / AMAT 153
CMSC 170	Introduction to Artificial Intelligence	CMSC 124
CMSC 172	Robot Modeling	CMSC 161
CMSC 180	Introduction to Parallel Computing	CMSC 132
CMSC 183	IT Project Management	CMSC 128
CMSC 191	Special Topics	COI

**Retention Policy:**

In addition to the existing UP code provision on student retention, a student is required to shift or transfer if any of the following is incurred:

- failed once in either CMSC 18 or CMSC 10, then eventually failed CMSC 28 once;
- failed once in either CMSC 18 or CMSC 56, then eventually failed CMSC 57 once;
- failed once in CMSC 122, then eventually failed once in CMSC 127 & CMSC 124;
- failed twice in any of the following: CMSC 3, CMSC 10, CMSC 18, CMSC 56, CMSC 28, CMSC 122, CMSC 130, CMSC 127, CMSC 133, CMSC 124.

**CONFORME:**

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*Signature over printed name*