

**DEPARTMENT OF PHYSICAL SCIENCES AND MATHEMATICS**  
**COLLEGE OF ARTS AND SCIENCES**  
**UNIVERSITY OF THE PHILIPPINES MANILA**



**Bachelor of Science in Computer Science**  
 (Effectivity: AY 2014-2015)

**First Year**  
**1<sup>ST</sup> Semester**

Subject	Units	Hrs./Wk.	Prerequisite
CMSC 11 (Introduction to Computer Science)	3	5	
Math 17 (Algebra and Trigonometry)	5	5	
AH – 1 (Comm I)	3	3	
SSP – 1 (History I)	3	3	
SSP – 2	3	3	
PE	(2)	3	
NSTP	(3)		
	<b>17</b>		

**2<sup>nd</sup> Semester**

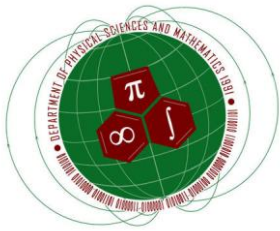
Subject	Units	Hrs./Wk.	Prerequisite
CMSC 21 (Fundamentals of Programming)	3	5	CMSC 11
CMSC 55 (Discrete Mathematical Structures in Computer Science)	4	4	CMSC 11, Math 17, Philo I
Math 73 (Fundamentals of Analysis I)	3	5	Math 17
AH – 2 (Comm II)	3	3	
SSP – 3 (Soc Sci 1)	3	3	
MST - 1	3	3	
PE	(2)	3	
NSTP	(3)		
	<b>19</b>		

**Second Year**  
**1<sup>st</sup> Semester**

Subject	Units	Hours/Week	Prerequisite
CMSC 23 (Object-Oriented Programming Paradigms)	3	5	CMSC 21
CMSC 123 (Data Structures)	3	5	CMSC 21, CMSC 55
Math 74 (Fundamental of Analysis II)	3	5	Math 73
Physics 71 (Elementary Physics I)	4	4	Math 73
Chem 14 (Fundamentals of General Chemistry I)	3	3	Math 11 or Math 17
Chem 14.1 (Fundamentals of General Chemistry I - Laboratory)	1	3	Math 11 or Math 17
AH - 3	3	3	
PE	(2)	3	
	<b>20</b>		

**2<sup>nd</sup> Semester**

Subject	Units	Hours/Week	Prerequisite
CMSC 121 (Web Programming)	3	5	CMSC 23
CMSC 127 (Database Systems)	3	5	CMSC 23
CMSC 130 (Logic Design & Digital Computer Circuits)	3	5	CMSC 21
Math 75 (Fundamentals of Analysis III)	3	5	Math 74
Math 101 (Elementary Statistics)	3	5	Math 11 or Math 17
Physics 72 (Elementary Physics II)	4	4	Physics 71
PE	(2)		
	<b>19</b>		



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**Summer**

	Subject	Units	Hours/Week	Prerequisite
	SSP – 4	3	3	
	AH - 4	3	3	
		<b>6</b>		

**Third Year  
1<sup>st</sup> Semester**

	Subject	Units	Hours/Week	Prerequisite
	CMSC 125 (Operating Systems)	3	5	CMSC 123
	CMSC 128.1 (Software Engineering I)	3	5	CMSC 121, CMSC 127
	CMSC 135 (Computer Organization & Architecture)	3	3	CMSC 21, CMSC 130
	Math 121.1 (Elementary Differential Equations I)	3	3	Math 75
	Stat 121 (Applied Probability Models)	3	5	Math 101
	Major Course 1 (Chem 32 / Stat 130)	3	5	(Chem 14 / Math 101)
	SSP - 5	3	3	
		<b>21</b>		

**2<sup>nd</sup> Semester**

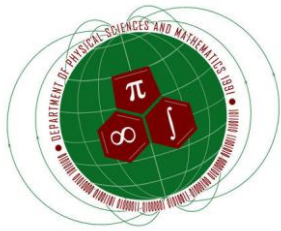
	Subject	Units	Hours/Week	Prerequisite
	CMSC 124 (Design & Implementation of Programming Languages)	3	5	CMSC 22, CMSC 123
	CMSC 128.2 (Software Engineering II)	3	5	CMSC 128.1
	CMSC 138 (Computer Networking)	3	5	CMSC 125
	Math 120 (Linear Algebra)	3	3	Math 75
	Math 174 (Numerical Analysis I)	3	3	CMSC 21, Math 121.1
	Major Course 2 (HI 191 / Stat 122)	3	(3 / 5)	(Junior standing / Stat 121)
	AH - 5	3	3	
		<b>21</b>		

**Summer**

	Subject	Units	Hours/Week	Prerequisite
	CMSC 190 (Practicum)	3		Junior standing
		<b>3</b>		

**Fourth Year  
1<sup>st</sup> Semester**

	Subject	Units	Hours/Week	Prerequisite
	CMSC 141 (Automata & Language Theory)	3	3	CMSC 124
	CMSC 161 (Interactive Computer Graphics)	3	5	CMSC 123, Math 120
	CMSC 171 (Ethical & Social Issues in Computer Science)	1	1	Junior Standing
	CMSC 197 (Undergraduate Seminar)	1	1	Senior Standing
	CMSC 199 (Research Methods in Computer Science)	3	3	Senior Standing
	Major Course 3 (HI 192 / Stat Comp 183)	3	(3 / 5)	(HI 191 / Math 120, Stat 122)
	Elective 1	3		
	MST 2	3	3	
		<b>20</b>		



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**2<sup>nd</sup> Semester**

	<b>Subject</b>	<b>Units</b>	<b>Hours/Week</b>	<b>Prerequisite</b>
	CMSC 142 (Design & Analysis of Algorithms)	3	3	CMSC 123
	CMSC 150 (Computer Security)	3	5	CMSC 128.2, CMSC 138
	CMSC 198 (Special Problem)	3	3	CMSC 197, CMSC 199
	Elective 2	3		
	PI 100	3	3	
	MST - 3	3	3	
		<b>18</b>		

**Major Courses**

<b>Health Informatics Track</b>			<b>Statistical Computing Track</b>		
<b>Subject</b>	<b>Units</b>	<b>Hrs/Wk.</b>	<b>Subject</b>	<b>Units</b>	<b>Hrs/Wk.</b>
HI 191 (Fundamentals of Health Informatics)	3	3	Stat 122 (Applied Bayesian Inferential Models)	3	5
HI 192 (Knowledge Representation & Health Decision Support System)	3	3	Stat 130 (Nonparametric Statistical Methods)	3	5
Chem 32 (Chemistry of Biomolecules)	3	5	Stat Comp 183 (Multivariate Statistical Model)	3	5

**Electives**

<b>Subject</b>	<b>Units</b>	<b>Hrs/Wk.</b>
CMSC 143 (Graph Algorithms)	3	3
CMSC 155 (Compiler Design and Construction)	3	5
CMSC 170 (Introduction to Artificial Intelligence)	3	3
CMSC 172 (Robot Modeling)	3	3
CMSC 175 (Information Technology Project Management)	3	3
CMSC 180 (Parallel Computing)	3	3
CMSC 191 (Special Topics) – <i>may be taken twice but should be of different topics</i>	3	3
HI 193.1 (Representation and Algorithms for Computational Biochemistry)	3	3
HI 193.2 (Genetic Algorithms and Genetic Programming)	3	3
Stat 186 (Time Series Analysis)	3	5
Stat 187 (Applied Bayesian Inference)	3	5
Stat Comp 181.1 (Linear Models in Statistical Computing I)	3	5
Stat Comp 181.2 (Linear Models in Statistical Computing II)	3	5
Stat Comp 185 (Stochastic Models)	3	5
Math 126 (Real Analysis)	3	3
Math 162 (Theory of Interests)	3	3
Math 164 (Life Contingencies)	3	3
Math 165 (Finite Differences)	3	3
Math 180.1 (Operations Research I)	3	3
Math 180.2 (Operations Research II)	3	3
Math 181 (Linear and Integer Programming)	3	3