

UNIVERSITY
HELEN WAY KLINGLER
COLLEGE OF ARTS AND SCIENCES

for

2017-2018

Department of Mathematics, Statistics and Computer Science

PROGRAM EDUCATIONAL OBJECTIVES

Within a few years of graduation, we expect alumni of our program to be applying the skills,

[Redacted content]

REQUIRED COURSES

All students must take the following sixteen courses:

COSC 1010	Introduction to Computer Programming	4 sem. hrs.
COSC 1020	Object-Oriented Software Design	4 sem. hrs.
COSC 2100	Data Structures & Algorithms 1	3 sem. hrs.
COSC 4610	Data Mining	3 sem. hrs.
COSC 4800	Principles of Database Systems	3 sem. hrs.
COSC 4920	Principles of Design	3 sem. hrs.
COSC 4998	Senior Design Project	3 sem. hrs.
MATH 1450	Calculus 1	4 sem. hrs.

MATH 1451	Calculus 2	4 sem. hrs.
MATH 2100/2350	Discrete Mathematics/ Foundations of Mathematics	3 sem. hrs.
MATH 2450	Calculus 3	4 sem. hrs.
MATH 3100	Linear Algebra and Matrix Theory	3 sem. hrs.
MATH 3XXX	Data Science and Data Visualization	3 sem. hrs.
MATH 4700	Theory of Probability	3 sem. hrs.
MATH 4720	Statistical Methods	3 sem. hrs.
MATH 4780	Regression Analysis	3 sem. hrs.

ELECTIVES

To complete the major, 6 additional semester hours of upper-division (3000- or 4000-level) COSC or MATH courses are required. A partial list of available choices is given below:

COSC 4600	Fundamentals of Artificial Intelligence	3 sem. hrs.
COSC 4931	Topics in Computer Science: Bioinformatics	3 sem. hrs.
MATH 4620	Mathematical Modeling and Applications	3 sem. hrs.

Data Science Major SAMPLE CURRICULUM

<i>First Term</i>		<i>Freshman</i>		<i>Second Term</i>	
	<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>
COSC 1010	4	COSC 1020	4		
MATH 1450	4	MATH 1451	4		
ENGL 1001	3	ENGL 1002	3		
UCCS- Science & Nature	4	UCCS – Histories of Cult./Soc	3		
	15		14		

<i>First Term</i>		<i>Sophomore</i>		<i>Second Term</i>	
	<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>
COSC 2100	3	MATH 3100	3		
MATH 2350	3	MATH 3***	3		
MATH 2450	4	MATH 4720	3		
UCCS – Literature / Performing Arts	3	UCCS – Ind. & Social Behavior	3		
Elective	3	Elective	3		
	16		15		

<i>First Term</i>		<i>Junior</i>		<i>Second Term</i>	
	<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>
COSC 4800	3	COSC 4610	3		
MATH 4700	3	Data Science Elective	3		
	15		15		
PHIL 1001	3	THEO 1001	3		
Electives	6	PHIL 2310	3		
	15	Elective	3		

<i>First Term</i>		<i>Senior</i>		<i>Second Term</i>	
	<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>
COSC 4920	3	COSC 4998	3		
Data Science Elective	3	COSC 4780	3		
UCCS – Theology	3	UCCS - Diverse Cultures	3		
Elective	6	Elective	6		
	15		15		

STEM-MBA program Data Science BS/MBA SAMPLE CURRICULUM

<i>Fall 1</i>	<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>
COSC 1010	4	COSC 1020	4
MATH 1450	4	MATH 1451	4
ENGL 1001	3	ENGL 1002	3
UCCS-Histories of Cult./Soc.	3	UCCS-Science & Nature	3
THEO 1001	3	BUAD 1060	1

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<i>Fall 2</i>	<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>
COSC 2100	3	MATH 3100	3
MATH 2350	3	MATH 3***	3
MATH 2450	4	MATH 4720	3
UCCS-Literature/Perform. Arts	3	UCCS-Diverse Cultures	3
PHIL 1001	3	ECON 1103	3

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<i>Fall 3</i>	<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>
COSC 4800	3	COSC 4610	3
MATH 4700	3	Data Science Elective	3
PHIL 2310	3	UCCS-Theology	3
Elective	3		3

ECON 1104	3	ACCO 1030	3
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<i>Fall 4</i>	<i>Sem. Hrs.</i>		<i>Sem. Hrs.</i>
COSC 4920	3	COSC 4998	3
Data Science Elective	3	MATH 4780	3
PHIL 4330	3	ACCO 6100	3
ACCO 1031	3	Electives	6
ECON 6100	3		

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STUDENT COMPUTING FACILITIES

Katherine Reed Cudahy Hall houses the University's Information Technology Service (ITS) central computing facilities on the second floor, and MSCS department computing facilities on the first, third and fourth floors.

Marquette students, faculty and staff are granted accounts on the Emarq and CheckMarq systems

CU 293) and are maintained throughout a student's enrollment at Marquette. Additional information regarding University computing facilities can be obtained by calling the ITS Help