

PROGRAM MODIFICATION PROPOSAL FORM

Name of Institution: Coastal Carolina University (CCU)

Nature of the Proposed Modification: The proposed modification is for a curriculum change.

Current Name of Program: Bachelor of Science (B.S.) in Computer Science

Proposed Name of Program: Bachelor of Science (B.S.) in Computer Science

Program Designation:

- | | |
|---|--|
| <input type="checkbox"/> Associate's Degree | <input type="checkbox"/> Master's Degree |
| <input checked="" type="checkbox"/> Bachelor's Degree: 4 Year | <input type="checkbox"/> Specialist |
| <input type="checkbox"/> Bachelor's Degree: 5 Year | <input type="checkbox"/> Doctoral Degree: Research/Scholarship (e.g., Ph.D. and DMA) |
| <input type="checkbox"/> Doctoral Degree: Professional Practice (e.g., Ed.D., D.N.P., J.D., Pharm.D., and M.D.) | |

Does the program currently qualify for supplemental Palmetto Fellows and LIFE Scholarship awards?

- Yes
 No

If No, should the program be considered for supplemental Palmetto Fellows and LIFE Scholarship awards?

- Yes
 No

Proposed Date of Implementation: Fall 2019

CIP Code: 11.0101

Current delivery site(s) and modes: CCU Main Campus, Traditional/Face-to-Face

Proposed delivery site(s) and modes: CCU Main Campus, Traditional/Face-to-Face

Program Contact Information:

Erin Rickard, Ph.D.
Associate Professor
Academic Office and Classroom 2 (AOC2) 220
843-349-2098 herrickard@coastal.edu

Institutional Approvals and Dates of Approval:

Feb 13, 2019 – Computing Sciences Curriculum Committee
Feb 19, 2019 - Department Chair
Feb 19, 2019 - College Curriculum Chair
Feb 19, 2019 - College Dean
April 11, 2019 - Academic Affairs Chair
May 1, 2019 – Faculty Senate
May 2, 2019 - Provost
May 2, 2019 - President

Background Information

This modification will require CSCI 250Q and CSCI 270 in the major requirements (CSCI 250Q is a new course and CSCI 270 was an elective), swap CSCI 310 and CSCI 473 in the major requirements, modify the science electives in the foundation requirements, and move all required CSCI courses from the foundation to the major requirements. The new courses meet the new “information management” and “networking and communication” curriculum requirements for the program’s Accreditation Board for Engineering and Technology, Inc. (ABET) accreditation. The CSCI 250Q course also will satisfy the University Experiential Learning requirement. The CSCI 310 course was originally a required courses. It is now provided as an option from a list of courses. The CSCI 473 course was originally provided as an option from a list of courses. The course is now a required course. The de-emphasis on CSCI 310 and emphasis on CSCI 473 are also a result of shifts in the ABET curriculum. CSCI 310 is no longer necessary to provide “exposure to computer architecture and organization” as other required courses meet this need. CSCI 473 meets the ABET requirement for “parallel and distributed computing.” The changes in the science courses meet the ABET requirement for “at least six semester credit hours (or equivalent) in natural science course work intended for science and engineering majors.”

By strengthening the quality of the degree program, this modification directly supports CCU’s mission to offer “undergraduate and graduate degree programs of national and/or regional significance in the arts and sciences, business, humanities, education, and health and human services.” It further supports the institution’s mission by preparing knowledgeable, productive, and responsible graduates to contribute positively to society and to economic development, in this case through the development and management of computer information systems.

This modification supports Objective 1.4.5 of the Coastal Carolina University Strategic Plan 2016-2021: “CCU will support high-quality innovative programs and curricula aligned with student demands, accreditation and standards expectations, regulatory requirements, and supportive professional preparation such that the CCU graduate student FTE population can reach 18 percent of the student population and the CCU undergraduate student FTE population can increase by 5 percent over 2015-2016.”

The addition of CSCI 250Q supports Objective 2.1.3. of the Coastal Carolina University Strategic Plan 2016-2021: “CCU will require all students to participate in one of the following types of experiential learning (for course credit): undergraduate research, internship, service learning, study abroad or special design projects, and the University will explore alternative noncredit experiences to support the experiential learning focus.”

Assessment of Need

The B.S. in CS program follows the ABET curriculum and the need to change the curriculum directly reflects recent updates in the ABET accreditation requirements as well as University requirements for Experiential Learning. These changes include:

1. Add the following required courses in the Major Requirements:
 - a. CSCI 250Q – Information Management (3 credits)
 - b. CSCI 270 – Data Communication Systems and Networks (3 credits)
2. Swap CSCI 310 and CSCI 473 in the Major Requirements.
 - a. Remove CSCI 310 as a required course and add it to the list of “Choose three”.
 - b. Remove CSCI 473 from the list of “Choose three” and add it as a required course.
3. Modify the science electives in the Foundation Requirements.
 - a. Remove the Science/math and Science II options.
 - b. Add “Choose two” from the following list: BIOL 121/121L; BIOL 122/122L; CHEM 111/111L; CHEM 112/112L; MSCI 111/111L; MSCI 112/112L; PHYS 137/137L; PHYS 211/211L; PHYS 212/212L; PHYS 235.

The final change involved moving all required computer sciences to the major requirements from the foundation section. The Department of Computing Sciences’ other degree programs (B.S. in IS and B.S. in IT) follow the same logic. All other courses including mathematics, communication, and science remain

in the foundation. With consistency across the programs, students will have an easier time comparing degree programs.

Transfer and Articulation

Not applicable for this program.

Description of the Program

Projected Enrollment						
Year	Fall Headcount		Spring Headcount		Summer Headcount	
	New	Total	New	Total	New	Total
2019-2020	56	165	5	127	0	0
2020-2021	57	166	5	128	0	0
2021-2022	58	168	5	129	0	0
2022-2023	59	171	6	131	0	0
2023-2024	60	174	6	134	0	0

Undergraduate enrollment at the University has experienced a four-year growth of 5.5%. The first row of the table above, that is 2019-2020, is based on actual student enrollment at CCU in the Computer Science program. The remaining years (2020-2021 to 2023-2024) were estimated using a linear growth model of 5.5% from 2019-2020 to 2023-2024.

This curriculum modification is being implemented in order to meet ABET and University Requirements.

Curriculum

Computer Science, B.S.
 Core Curriculum Requirements
 Core Curriculum (38-40 Total Credit Hours)

Graduation Requirements
 Graduation Requirements (3-7+ Credits) *

Foundation Requirements (28-30 Credits) *

Complete the following courses:

MATH 160 - Calculus I (4 credits)

MATH 161 - Calculus II (4 credits)

MATH 174 - Introduction to Discrete Mathematics (3 credits)

STAT 201 - Elementary Statistics (3 credits) AND

STAT 201L - Elementary Statistics Computer Laboratory (1 credit)

Choose one course from the following:

MATH 242 - Modeling for Scientists I (3 credits) AND

MATH 242L - Modeling for Scientists I Laboratory (1 credit)

MATH 220 - Mathematical Proofs and Problem Solving (3 credits)

MATH 260 - Calculus III (4 credits)

MATH 307 - Combinatorics (3 credits)

MATH 308 - Graph Theory (3 credits)

MATH 320 - Elementary Differential Equations (3 credits)

MATH 344 - Linear Algebra (3 credits)

MATH 407 - Coding Theory (3 credits)

MATH 408 - Cryptography (3 credits)

Choose two courses from the following:

BIOL 121 - Biological Science I (3 credits) AND
BIOL 121L - Biological Science I Laboratory (1 credit)
BIOL 122 - Biological Science II (3 credits) AND
BIOL 122L - Biological Science II Laboratory (1 credit)
CHEM 111 - General Chemistry I (3 credits) AND
CHEM 111L - General Chemistry Laboratory I (1 credit)
CHEM 112 - General Chemistry II (3 credits) AND
CHEM 112L - General Chemistry Laboratory II (1 credit)
MSCI 111 - Introduction to Marine Science (3 credits) AND
MSCI 111L - The Present-Day Marine Environment Laboratory (1 credit)
MSCI 112 - The Origin and Evolution of the Marine Environment (3 credits)
MSCI 112L - Marine Environment Laboratory (1 credit)
PHYS 137 - Models in Physics (3 credits) AND
PHYS 137L - Models in Physics Laboratory (1 credit)
PHYS 211 - Essentials of Physics I (3 credits) AND
PHYS 211L - Essentials of Physics I Laboratory (1 credit)
PHYS 212 - Essentials of Physics II (3 credits) AND
PHYS 212L - Essentials of Physics II Laboratory (1 credit)
PHYS 235 – Electric Circuits (3 credits)

Choose one course from the following:

COMM 140 - Modern Human Communication: Principles and Practices (3 credits)
ENGL 390 - Business and Professional Communication (3 credits)

Major Requirements (60 Credits) *

Complete the following courses:

CSCI 120 - Introduction to Web Interface Development (3 credits)
CSCI 130 - Introduction to Computer Science (3 credits)
CSCI 140 - Introduction to Algorithmic Design I (3 credits) AND
CSCI 140L - Introduction to Algorithmic Design I Laboratory (1 credit)
CSCI 150 - Introduction to Algorithmic Design II (3 credits) AND
CSCI 150L - Introduction to Algorithmic Design II Laboratory (1 credit)
CSCI 170 - Ethics in Computer Science (1 credit)
CSCI 210 - Computer Organization and Programming (3 credits)
CSCI 220 - Data Structures (3 credits)
CSCI 250Q - Information Management (3 credits)
CSCI 270 - Data Communication Systems and Networks (3 credits)

Choose one CSCI course numbered 200 or above (3 credits) **

Choose one CSCI course numbered 300 or above (3 credits) **

CSCI 330 - Systems Analysis & Software Engineering (3 credits)
CSCI 350 - Organization of Programming Languages (3 credits)
CSCI 356 - Operating Systems (3 credits)
CSCI 380 - Introduction to the Analysis of Algorithms (3 credits)
CSCI 390 - Theory of Computation (3 credits)
CSCI 473 - Introduction to Parallel Systems (3 credits)
CSCI 400 - Senior Assessment (0 credits)

Choose three courses from the following:

CSCI 310 - Introduction to Computer Architecture (3 credits)
CSCI 425 - Database Systems Design (3 credits)
CSCI 440 - Introduction to Computer Graphics (3 credits)
CSCI 445 Q* - Image Processing and Analysis (3 credits)
CSCI 466 - Informatics and Knowledge Discovery (3 credits)
CSCI 484 - Machine Learning (3 credits)

CSCI 485 - Introduction to Robotics (3 credits)
CSCI 490 - Software Engineering II (3 credits)

* Course credit hours only count once toward the total university graduation credit hour requirements.

Click on Credit Sharing for more information.

** Courses taken elsewhere in the Core, Foundation, or Major may not be used to satisfy these requirements.

Curriculum Changes

Courses Eliminated from Program	Courses Added to Program	Core Courses Modified
	CSCI 250Q	
	CSCI 270	

New Courses

- CSCI 250Q - Information Management (3 credits) (Prerequisites: A grade of "C" or better in CSCI 135 or CSCI 140/CSCI 140L). This course covers the key aspects of information management including the acquisition, classification, storage, analysis, presentation, and archival of information. Privacy and security of information will also be addressed. The course connects theoretical concepts with practice through experiential learning activities that are designed to provide students with real-world experiences related to the life cycle of information. F, S
- CSCI 270 - Data Communication Systems and Networks (3 credits) (Prereq: A grade of 'C' or better in CSCI 210 or CSCI 211) Fundamentals of data communications, including hardware, basic components of communications, configurations, networks and applications, protocols, and software are discussed. F, S.

Similar Programs in South Carolina offered by Public and Independent Institutions

Program Name and Designation	Total Credit Hours	Institution	Similarities	Differences
B.S. Computer Science [CIP 11.0101]	122	Clemson University	Some overlap with programming and software engineering.	CCU's program includes information management, and more theory.
Francis Marion University [CIP 11.0101]	122	Francis Marion	Some overlap computer organization and programming.	CCU's program requires information management and advanced software engineering.
BS Computer Information Systems [CIP 11.0101]	120	Lander University	Some overlap with programming.	Lander's is listed as a CIS program, not a CS program and requires a minor. CCU requires information management.
BS Computer Science [CIP 11.0101]	125	South Carolina State University	Some overlap in data structures,	CCU requires information management. CCU

Program Name and Designation	Total Credit Hours	Institution	Similarities	Differences
			mathematics, and programming.	requires software engineering. SCSU requires database management.
BS Computer Science [CIP 11.0101]	129+	The Citadel	Some overlap with mathematics, programming, and data structures.	The Citadel requires physical education and military classes. CCU requires information management
BS Computer Science [CIP 11.0101]	128	USC – Columbia	Some overlap in data structures and software engineering.	USC-C requires an application area in another department. USC-C requires Linux CCU requires information management and computer organization.
BS Applied Computer Science [CIP 11.0101]	120	USC – Aiken	Some programming and mathematics overlap.	USC-A has a focus on data, web, and graphics. CCU requires information management and more theoretical coursework such as theory of computation and computer organization.
BS Computer Science [CIP 11.0101]	120	USC – Upstate	Some overlap in mathematics, computer organization, and programming.	USC-U requires a focus area. CCU's is more theoretical requiring theory of computation, and parallel systems. CCU requires information management and additional software engineering.
BS Computer Science [CIP 11.0101]	120	Winthrop University	Some overlap with computer organization and operating systems.	CCU requires information management, parallel processing and theory of computation.
BS Computer Information Systems [CIP 11.0101]	120	Southern Wesleyan University	Some overlap with mathematics and programming.	SWU's degree is listed as computer information systems and requires a concentration (e.g. music). CCU requires information management. CCU's is more theoretical with parallel processing and theory of computation.
BS Computer Science [CIP 11.0101]	121	Voorhees College		VC's is a CS and Cyber degree. CCU's is a theoretical CS degree. CCU requires parallel

Program Name and Designation	Total Credit Hours	Institution	Similarities	Differences
				programming, theory of computation, and information management.

Faculty

No changes in faculty, staff, or administrative personnel are needed as a direct result of this program modification. Existing faculty have the necessary expertise to teach the courses that have been added to the program. In the future, additional faculty and staff support will be determined by University allocation resources at that time.

Resources

Library Resources: No new library resources are needed.

Equipment: No new equipment is needed.

Facilities: No new facilities are needed.

Impact on Existing Programs

Will the proposed program impact existing degree programs or services at the institution (e.g., course offerings or enrollment)? If yes, explain

Yes

No

Estimated Sources of Financing for the New Costs						
Category	1st	2nd	3rd	4th	5th	Total
Tuition Funding	\$2,843,181	\$2,919,908	\$3,008,697	\$3,120,535	\$3,246,183	\$15,138,503
Program-Specific Fees						\$0
Special State Appropriation						\$0
Reallocation of Existing Funds						\$0
Federal, Grant, or Other Funding						\$0
Total	\$2,843,181	\$2,919,908	\$3,008,697	\$3,120,535	\$3,246,183	\$15,138,503
Estimated New Costs by Year						
Category	1st	2nd	3rd	4th	5th	Total
Program Administration and Faculty and Staff Salaries	\$1,037,257	\$1,064,997	\$1,096,998	\$1,137,130	\$1,182,140	\$5,518,521
Facilities, Equipment, Supplies, and Materials						\$0
Library Resources						\$0
Other (specify)						\$0
Total	\$1,037,257	\$1,064,997	\$1,096,998	\$1,137,130	\$1,182,140	\$5,518,521
Net Total (i.e., Sources of Financing Minus Estimated New Costs)	\$1,805,923	\$1,854,911	\$1,911,699	\$1,983,405	\$2,064,043	\$9,619,982

Financial Support

Budget Justification

The program modification is for a curriculum change. No new costs are associated with this curriculum modification. In the future, if enrollment does increase based on the concentrations, then additional faculty and staff support will be determined by University allocation resources at that time.

Evaluation and Assessment

The Student Learning Outcomes (SLOs) for the program are specified by the ABET accreditation criteria¹, which have been revised significantly for the 2019-2020 review cycle. The B.S. in CS program will be submitted for re-accreditation during the 2020-2021 academic year and must therefore meet these new criteria.

Program Objectives	Student Learning Outcomes Aligned to Program Objectives	Methods of Assessment
1 - Graduates should be contributing to society through the application of strong core competencies in the field.	<p>SLO 1: Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.</p> <p>SLO 2: Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.</p>	Course activities (assignments, quizzes, tests, examinations, etc.) mapped directly to ABET SLOs and assessed each semester on a per-course basis through Faculty Course Assessment Reports; Senior Exit Exam is given to graduating students in their final semester of the program; Exit Survey is given to graduating students in their final semester of the program; evaluation of courses twice during each evaluation cycle (with curricular changes made as needed to ensure compliance with the current applicable version of the ABET accreditation guidelines).
2 - Graduates should demonstrate a commitment to professional and ethical practices.	<p>SLO 3 -SLO 3: Communicate effectively in a variety of professional contexts.</p> <p>SLO 4: Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.</p> <p>SLO 5: Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.</p>	Course activities (assignments, quizzes, tests, examinations, etc.) mapped directly to ABET SLOs and assessed each semester on a per-course basis through Faculty Course Assessment Reports; Senior Exit Exam is given to graduating students in their final semester of the program; Exit Survey is given to graduating students in their final semester of the program; evaluation of courses twice during each evaluation cycle (with curricular changes made as needed to ensure compliance with the current

¹ ABET, Inc. Criteria for Accrediting Computing Programs, 2019 – 2020.
<https://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-computing-programs-2019-2020/>
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Program Objectives	Student Learning Outcomes Aligned to Program Objectives	Methods of Assessment
		applicable version of the ABET accreditation guidelines).
3 - Graduates should be successfully adapting to technical, societal, and environmental changes by building upon strong foundational competencies.	SLO 6: Apply computer science theory and software development fundamentals to produce computing-based solutions.	Course activities (assignments, quizzes, tests, examinations, etc.) mapped directly to ABET SLOs and assessed each semester on a per-course basis through Faculty Course Assessment Reports; Senior Exit Exam is given to graduating students in their final semester of the program; Exit Survey is given to graduating students in their final semester of the program; evaluation of courses twice during each evaluation cycle (with curricular changes made as needed to ensure compliance with the current applicable version of the ABET accreditation guidelines).

The Program Educational Objectives are reviewed by the Advisory Board at least once per ABET accreditation review cycle, or more frequently, if necessary. The Advisory Board consists of employers related to the discipline. Recommendations from the Advisory Board are used as part of the program's continuous improvement process.

Will any the proposed modification impact the way the program is evaluated and assessed?

- Yes
- No

Will the proposed modification affect or result in program-specific accreditation?

- Yes
- No

The department will be seeking ABET re-accreditation for the Computer Science program in the 2020-2021 academic year. These curriculum changes are necessary to meet the new ABET requirements for program accreditation.

Will the proposed modification affect or lead to licensure or certification? If yes, identify the licensure or certification.

- Yes
- No

Explain how the program will prepare students for this licensure or certification.

If the program is an Educator Preparation Program, does the proposed certification area require national recognition from a Specialized Professional Association (SPA)?

- Yes

No

Not applicable for this program.

Appendix

Department of Computing Sciences

a. Computer Science, B.S. (Form B – ID# 2286)

Core Curriculum Requirements

Core Curriculum (38-40 Total Credit Hours)

Graduation Requirements

Graduation Requirements (3-7+ Credits) *

Foundation Requirements (47-51 28-30 Credits) *

Complete the following courses:

- ~~CSCI 140 – Introduction to Algorithmic Design I (3 credits) AND~~
- ~~CSCI 140L – Introduction to Algorithmic Design I Laboratory (1 credit)~~
- ~~CSCI 150 – Introduction to Algorithmic Design II (3 credits) AND~~
- ~~CSCI 150L – Introduction to Algorithmic Design II Laboratory (1 credit)~~
- ~~CSCI 120 – Introduction to Web Interface Development (3 credits)~~
- ~~CSCI 130 – Introduction to Computer Science (3 credits)~~
- ~~CSCI 170 – Ethics in Computer Science (1 credit)~~
- ~~CSCI 210 – Computer Organization and Programming (3 credits)~~
- ~~CSCI 220 – Data Structures (3 credits)~~
- ~~Choose one CSCI course numbered 200 or above (3 credits) **~~
- MATH 160 - Calculus I (4 credits) *
- MATH 161 - Calculus II (4 credits)
- MATH 174 - Introduction to Discrete Mathematics (3 credits)
- STAT 201 - Elementary Statistics (3 credits) * AND
- STAT 201L - Elementary Statistics Computer Laboratory (1 credit) *

Choose one course from the following: **

- MATH 242 - Modeling for Scientists I (3 credits) AND
- MATH 242L - Modeling for Scientists I Laboratory (1 credit)
- MATH 220 - Mathematical Proofs and Problem Solving (3 credits)
- MATH 260 - Calculus III (4 credits)
- MATH 307 - Combinatorics (3 credits)
- MATH 308 - Graph Theory (3 credits)
- MATH 320 - Elementary Differential Equations (3 credits)
- MATH 344 - Linear Algebra (3 credits)
- MATH 407 - Coding Theory (3 credits)
- MATH 408 - Cryptography (3 credits)

Choose one course from the following: **

- ~~BIOL 121 – Biological Science I (3 credits) AND~~
- ~~BIOL 121L – Biological Science I Laboratory (1 credit)~~
- ~~CHEM 111 – General Chemistry I (3 credits) AND~~
- ~~CHEM 111L – General Chemistry Laboratory I (1 credit)~~
- ~~MSCI 111 – Introduction to Marine Science (3 credits) AND~~
- ~~MSCI 111L – The Present Day Marine Environment Laboratory (1 credit)~~

- ~~PHYS 137 – Models in Physics (3 credits) AND~~
- ~~PHYS 137L – Models in Physics Laboratory (1 credit)~~
- ~~PHYS 201 – General Physics I (3 credits) AND~~
- ~~PHYS 201L – General Physics I Laboratory (1 credit)~~
- ~~PHYS 211 – Essentials of Physics I (3 credits) AND~~
- ~~PHYS 211L – Essentials of Physics I Laboratory (1 credit)~~
- ~~MATH 242 – Modeling for Scientists I (3 credits) AND~~
- ~~MATH 242L – Modeling for Scientists I Laboratory (1 credit)~~
- ~~MATH 260 – Calculus III (4 credits)~~
- ~~MATH 342 – Modeling for Scientist II (3 credits) AND~~
- ~~MATH 342L – Modeling for Scientist II Laboratory (1 credit)~~
- ~~MATH 446 – Abstract Algebra (3 credits) AND~~
- ~~MATH 446L – Abstract Algebra Laboratory (1 credit)~~

Choose one course from the following:

- ~~BIOL 122 – Biological Science II (3 credits) AND~~
- ~~BIOL 122L – Biological Science II Laboratory (1 credit)~~
- ~~CHEM 112 – General Chemistry II (3 credits) AND~~
- ~~CHEM 112L – General Chemistry Laboratory II (1 credit)~~
- ~~MSCI 112 – The Origin and Evolution of the Marine Environment (3 credits)~~
- ~~MSCI 112L – Marine Environment Laboratory (1 credit)~~
- ~~PHYS 202 – General Physics II (3 credits) AND~~
- ~~PHYS 202L – General Physics II Laboratory (1 credit)~~
- ~~PHYS 211 – Essentials of Physics I (3 credits) AND~~
- ~~PHYS 211L – Essentials of Physics I Laboratory (1 credit)~~
- ~~PHYS 212 – Essentials of Physics II (3 credits) AND~~
- ~~PHYS 212L – Essentials of Physics II Laboratory (1 credit)~~

Choose two courses from the following:

- BIOL 121 - Biological Science I (3 credits) AND
- BIOL 121L - Biological Science I Laboratory (1 credit)
- BIOL 122 - Biological Science II (3 credits) AND
- BIOL 122L - Biological Science II Laboratory (1 credit)
- CHEM 111 - General Chemistry I (3 credits) AND
- CHEM 111L - General Chemistry Laboratory I (1 credit)
- CHEM 112 - General Chemistry II (3 credits) AND
- CHEM 112L - General Chemistry Laboratory II (1 credit)
- MSCI 111 - Introduction to Marine Science (3 credits) AND
- MSCI 111L - The Present-Day Marine Environment Laboratory (1 credit)
- MSCI 112 - The Origin and Evolution of the Marine Environment (3 credits)
- MSCI 112L - Marine Environment Laboratory (1 credit)
- PHYS 137 - Models in Physics (3 credits) AND
- PHYS 137L - Models in Physics Laboratory (1 credit)
- PHYS 211 - Essentials of Physics I (3 credits) AND
- PHYS 211L - Essentials of Physics I Laboratory (1 credit)
- PHYS 212 - Essentials of Physics II (3 credits) AND

- PHYS 212L - Essentials of Physics II Laboratory (1 credit)
- PHYS 235 – Electric Circuits (3 credits)

Choose one course from the following:

- COMM 140 - Modern Human Communication: Principles and Practices (3 credits)
- ENGL 390 - Business and Professional Communication (3 credits)

Major Requirements (30 60 Credits) *

Complete the following courses:

- CSCI 120 - Introduction to Web Interface Development (3 credits)
- CSCI 130 - Introduction to Computer Science (3 credits)
- CSCI 140 - Introduction to Algorithmic Design I (3 credits) AND
- CSCI 140L - Introduction to Algorithmic Design I Laboratory (1 credit)
- CSCI 150 - Introduction to Algorithmic Design II (3 credits) AND
- CSCI 150L - Introduction to Algorithmic Design II Laboratory (1 credit)
- CSCI 170 - Ethics in Computer Science (1 credit)
- CSCI 210 - Computer Organization and Programming (3 credits)
- CSCI 220 - Data Structures (3 credits)
- CSCI 250Q - Information Management (3 credits)
- CSCI 270 - Data Communication Systems and Networks (3 credits)
- Choose one CSCI course numbered 200 or above (3 credits) **
- Choose one CSCI course numbered 300 or above (3 credits) **
- ~~CSCI 310 - Introduction to Computer Architecture (3 credits)~~
- CSCI 330 - Systems Analysis & Software Engineering (3 credits)
- CSCI 350 - Organization of Programming Languages (3 credits)
- CSCI 356 - Operating Systems (3 credits)
- CSCI 380 - Introduction to the Analysis of Algorithms (3 credits)
- CSCI 390 - Theory of Computation (3 credits)
- CSCI 473 - Introduction to Parallel Systems (3 credits)
- CSCI 400 - Senior Assessment (0 credits)

Choose three courses from the following:

- CSCI 310 - Introduction to Computer Architecture (3 credits)
- CSCI 425 - Database Systems Design (3 credits)
- CSCI 440 - Introduction to Computer Graphics (3 credits)
- CSCI 445 Q* - Image Processing and Analysis (3 credits)
- CSCI 466 - Informatics and Knowledge Discovery (3 credits)
- ~~CSCI 473 - Introduction to Parallel Systems (3 credits)~~
- CSCI 484 - Machine Learning (3 credits)
- CSCI 485 - Introduction to Robotics (3 credits)