EXHIBIT B

EXHIBIT B

OCEAN
COUNTY COLLEGE

BOARD OF TRUSTEES

Bylaw, Policy, and Curriculum Committee Agenda Items

To: Board of Trustees

From: Office of the President

Date: August 18, 2022

The following Bylaw, Policy, and Curriculum Committee items are recommended to the Ocean County College Board of Trustees for approval at its meeting on **Thursday, August 25, 2022**:

1. Recommend approval of the following 2021-22 Advisory Committees: **(Exhibit B-1)**

    a. Addictions Counseling Advisory Committee
    b. Business Advisory Committee
    c. Computer Studies Advisory Committee
    d. Criminal Justice Advisory Committee
    e. Engineering Advisory Committee
    f. Environmental Management Advisory Committee
    g. Fine and Performing Arts Advisory Committee
    h. Health and Human Performance Advisory Committee
    i. Hospitality, Recreation, and Tourism Management Advisory Committee
    j. Interpreter Sign Language Advisory Committee
    k. Law and Public Safety Advisory Committee
    l. Media and Communications Advisory Committee
    m. Nursing Advisory Committee
    n. Social Work Advisory Committee

2. Recommend approval of the following items as accepted by the College Senate at its meeting on August 4, 2022:

    a. Revised Programs

        1) Associate in Science Degree in Computer Science, Cyber-Information Security Option **(Exhibit B-2)**
        2) Associate in Science Degree in Computer Science, Information Technology Option **(Exhibit B-3)**
        3) Associate in Science Degree in Environmental Studies **(Exhibit B-4)**

b. Revised Courses

1) CHEM 182, General Chemistry II **(Exhibit B-5)**
2) CSIT 175, Digital Logic and Circuits **(Exhibit B-6)**

c. Revised Course and Course Code

1) SCIE 105, Forensic Science to FRSC 105 **(Exhibit B-7)**

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EXHIBIT B-2

EXHIBIT B - 2

Program Change Request

Date Submitted: 06/23/22 12:44 pm

Viewing: AS.CS.CIS : Computer Science with Cyber-Information Security Option, Associate in Science

Last approved: 06/15/22 12:04 pm

Last edit: 08/10/22 4:04 pm

Changes proposed by: Helga Paggi (hpaggi)

Catalog Pages Using this Program

Cyber-Information Security, an Option to the Associate in Science in Computer Sci

Program Type	Associate of Science (AS)
Program Title	Computer Science with Cyber-Information Security Option, Associate in Science
Academic School	Science, Technology, Engineering, Mathematics
Effective Catalog Year	2023-2024
Program Code	AS.CS.CIS
CIP Code	110101 - Computer and Information Sciences, General.

Program Description

In Workflow

1. STEM Academic Administrator
2. STEM Dean
3. Director of Curriculum
4. Curriculum Committee Chair
5. Senate Chair
6. Vice President of Academic Affairs
7. President's Leadership Team Chair
8. President
9. Board of Trustees Chair
10. Academic Administrator for Programs

Approval Path

1. 06/29/22 11:09 am Cynthia Fallon (cfallon): Approved for STEM Academic Administrator
2. 06/29/22 11:13 am Sylvia Riviello (sriviello): Approved for STEM Dean
3. 06/30/22 3:39 pm Susan O'Connor (soconnor): Approved for

EXHIBIT B - 2

Director of Curriculum
4. 07/14/22 4:26 pm Heather Sciarappa (hsciarappa): Approved for Curriculum Committee Chair
5. 08/04/22 4:32 pm Robert Marchie (rmarchie): Approved for Senate Chair
6. 08/05/22 9:25 am Joseph Konopka (jkonopka): Approved for Vice President of Academic Affairs
7. 08/12/22 4:58 pm Connie Bello (cbello): Approved for President's Leadership Team Chair
8. 08/12/22 4:59 pm Connie Bello (cbello): Approved for President

History

1. Jun 15, 2022 by Susan O'Connor (soconnor)

The Cyber/Information Security option to the A.S. in Computer Science is designed for those who major in computer science with plans to be in the information security field. This degree is a broad program of study that covers basics of cyber security and focuses on information security.

Program Objectives

Program Goals

	Program goals
PG1	NA

Program Learning Outcomes

	Students who successfully complete this program will be able to:
PLO1	Explain the topics of cyber security.
PLO2	Apply the concepts, principles, and technologies of information security.
PLO3	Demonstrate foundational computer science knowledge.
PLO4	Demonstrate an understanding cryptography, authentication, and intrusion detection technologies.

Learning Outcomes Display (show only)

Course Code	PLO 1	PLO 2	PLO 3	PLO 4
FirstSemester				
ENGL 151				
MATH 265				
CSIT 165				
STSC 150				
SecondSemester				
ENGL 152				
MATH 266				
CSIT 166				
CSIT 176				

Course Code	PLO 1	PLO 2	PLO 3	PLO 4
ThirdSemester				
CSIT 200				
MATH 267				
BIOL 161				
FourthSemester				
CSIT 240				
BIOL 162				

Required Qualifications

Program Requirements

Plan of Study Grid

First Semester		Credit Hours
ENGL 151	English I	3
MATH 265	Calculus I	4
CSIT 165	Programming I	4
Humanities Gen. Ed. Requirement		3
STSC 150	Student Success Seminar	2
	Credit Hours	16
Second Semester		
ENGL 152	English II	3
MATH 266	Calculus II	4
~~CSIT 144~~	~~Introduction to Operating System Using Unix~~	~~3~~
~~CSIT 185~~	~~Networking I~~	~~3~~
~~or CSIT 184~~	~~or Networking Essentials~~	
CSIT 166	Programming II	4
CSIT 176	Computer Organization & Architecture	3
Humanities or Social Science Gen. Ed. Requirement		3
	Credit Hours	17
Third Semester		
~~MATH 270~~	~~Discrete Mathematics~~	~~3~~
CSIT 200	Information Security Fundamentals	3
~~CSIT 212~~	~~Systems Analysis~~	~~3~~
~~Select one of the following to fulfill the Lab Science Gen. Ed. Requirement:~~		~~4~~
CSIT Elective [1]		3
MATH 267	Calculus III	3

or MATH 270	or Discrete Mathematics	
or MATH 275	or Linear Algebra	
BIOL 161	General Biology I	4
or CHEM 181	or General Chemistry I	
or PHYS 281	or General Physics I	
~~CHEM 181~~	~~General Chemistry I~~	
~~PHYS 281~~	~~General Physics I~~	
Social Science Gen. Ed. Requirement		3
	Credit Hours	16
Fourth Semester		
~~CSIT 213~~	~~Database Management~~	~~3~~
CSIT 240	Ethical Hacking: Hacker Techniques and Tools	3
Computer Science (CSIT) or Criminal Justice (CRIM) Elective [2]		3
~~Select one of the following to fulfill the Lab Science Gen. Ed. Requirement:~~		~~4~~
BIOL 162	General Biology II	4
or CHEM 182	or General Chemistry II	
or PHYS 282	or General Physics II	
~~CHEM 182~~	~~General Chemistry II~~	
~~PHYS 282~~	~~General Physics II~~	
Elective to meet 60 credits		1
	Credit Hours	11
	Total Credit Hours	60

1
Choose from the following Computer Science, CSIT Electives: CSIT 185, CSIT 200, CSIT 213, CSIT 265, CSIT 240, CSIT 241, CSIT 212.

2
Choose from any CRIM course, any CSIT course listed in footnote #1 above, or an unlisted CSIT course that has been approved by the computer science department.

Degree Requirements Breakdown

GCOM

Course Code & Title	Credits
ENGL 151 ~~NA~~	3 ~~NA~~
ENGL 152	3

GHUM

Course Code & Title	Credits
GEN ED HUMN ~~NA~~	3 ~~NA~~

GSOC

Course Code & Title	Credits

Course Code & Title	Credits
GEN ED SOCIAL SCIENCE ~~NA~~	3 ~~NA~~

GSOC/ GHUM

Course Code & Title	Credits
GEN ED HUMN OR SOCIAL SCIENCE ~~NA~~	3 ~~NA~~

GMAT/ GSCI/ GTEC

Course Code & Title	Credits
CSIT 165 ~~NA~~	4 ~~NA~~
MATH 265	4
MATH 266	4
MATH 270 OR 275 OR 267	3
BIOL 161 OR CHEM 181 OR PHYS281	4
BIOL 162 OR CHEM 182 OR PHYS 282	4

General Education

Course Code & Title	Credits
STSC 150 ~~NA~~	2 ~~NA~~

Concentration Courses

Course Code & Title	Credits
CSIT 166 ~~NA~~	4 ~~NA~~
CSIT 200	3
CSIT 240	3
CSIT OR CRIM ELECTIVE	3
CSIT ELECTIVE	3
CSIT 176	3

Elective Courses

Course Code & Title	Credits
ELECTIVE ~~NA~~	1 ~~NA~~

Board Approval

History of Board approval dates

March 29, 2018

Reviewer
Comments

Key: 15

Program Change Request

Date Submitted: 06/23/22 12:12 pm

Viewing: AS.CS.IT : Computer Science with Information Technology Option, Associate in Science

Last edit: 08/10/22 4:10 pm

Changes proposed by: Helga Paggi (hpaggi)

Catalog Pages Using this Program

Information Technology, an Option to the Associate in Science in Computer Scienc

Program Type	Associate of Science (AS)
Program Title	Computer Science with Information Technology Option, Associate in Science
Academic School	Science, Technology, Engineering, Mathematics
Effective Catalog Year	2023-2024
Program Code	AS.CS.IT
CIP Code	110101 - Computer and Information Sciences, General.

Program Description

In Workflow

1. STEM Academic Administrator
2. STEM Dean
3. Director of Curriculum
4. Curriculum Committee Chair
5. Senate Chair
6. Vice President of Academic Affairs
7. President's Leadership Team Chair
8. President
9. Board of Trustees Chair
10. Academic Administrator for Programs

Approval Path

1. 06/29/22 11:09 am Cynthia Fallon (cfallon): Approved for STEM Academic Administrator
2. 06/29/22 11:16 am Sylvia Riviello (sriviello): Approved for STEM Dean
3. 06/30/22 3:38 pm Susan O'Connor (soconnor): Approved for

Director of Curriculum
4. 07/15/22 9:48 am Heather Sciarappa (hsciarappa): Approved for Curriculum Committee Chair
5. 08/04/22 4:34 pm Robert Marchie (rmarchie): Approved for Senate Chair
6. 08/05/22 9:25 am Joseph Konopka (jkonopka): Approved for Vice President of Academic Affairs
7. 08/12/22 4:58 pm Connie Bello (cbello): Approved for President's Leadership Team Chair
8. 08/12/22 5:00 pm Connie Bello (cbello): Approved for President

The program outlined here will prepare students for transfer to a four-year college to obtain a Bachelor of Science degree in Computer Science and provide a solid base of knowledge for a career in Computer Information Technology. The curriculum closely follows program requirements of prominent four-year higher education institutions in New Jersey and is designed to address the preparation of our students for a future in Computer Information Technology. ~~computer information systems. The curriculum follows the model provided by the Association of Computing Machinery and the Institute of Electrical and Electronics Engineers Computer Society in order to assure maximumtransferability.The field of information technology is interdisciplinary, with applications to all aspects of theeconomy.Information technologists need a balance of software and hardware applications with concentration in specificcourses.~~This curriculum has been designed to prepare the student to meet the future needs of integration, design, deployment and management of computing, resources and services.

Program Objectives

Program Goals

	Program goals
PG1	NA

Program Learning Outcomes

	Students who successfully complete this program will be able to:
PLO1	Identify the basic concepts of the computer system and computer architecture including functions of an operating system, major computer data, instruction and addressing formats, and network protocols and topography.
PLO2	Recognize the problems involved in program portability and be able to identify the solutions to these problems.
PLO3	Describe the software life cycle.
PLO4	Identify the requirements and rationale for allocating static, dynamic and virtual memory.
PLO5	Discuss the rationale and implement both member and friend examples of operator overloading.
PLO6	Describe and implement sequential and binary search and common selection, exchange and insertion sorting algorithms. Analyze (big O) algorithms.

	Students who successfully complete this program will be able to:
PLO7	Demonstrate knowledge and skills in the areas of Computer Science to solve technical and computational problems.

Learning Outcomes Display (show only)

Course Code	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
FirstSemester							
ENGL 151							
MATH 265							
CSIT 165							
STSC 150							
SecondSemester							
ENGL 152							
MATH 266							
CSIT 166							
CSIT 176							
ThirdSemester							
MATH 267							
BIOL 161							
FourthSemester							
CSIT 185							

Course Code	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
BIOL 162							

Required Qualifications

Plan of Study Grid

First Semester		Credit Hours
ENGL 151	English I	3
MATH 265	Calculus I	4
CSIT 165	Programming I	4
Humanities Gen. Ed. Requirement		3
~~Social Science Gen. Ed. Requirement~~		~~3~~
STSC 150	Student Success Seminar	2
	Credit Hours	16
Second Semester		
ENGL 152	English II	3
~~MATH 265~~	~~Calculus I~~	~~4~~
MATH 266	Calculus II	4
CSIT 166	Programming II	4
CSIT 176	Computer Organization & Architecture	3
Humanities or Social Science Gen. Ed. Requirement		3
	Credit Hours	17
Third Semester		
~~MATH 266~~	~~Calculus II~~	~~4~~
~~CSIT 185~~	~~Networking I~~	~~3~~
~~CSIT 265~~	~~Data Structures and Analysis~~	~~4~~
~~Select one of the following to fulfill the Lab Science Gen. Ed. Requirement:~~		~~4~~
CSIT Elective [1]		3
MATH 267	Calculus III	3-4
or MATH 270	or Discrete Mathematics	
or MATH 275	or Linear Algebra	
BIOL 161	General Biology I	4
or CHEM 181	or General Chemistry I	
or PHYS 281	or General Physics I	
~~CHEM 181~~	~~General Chemistry I~~	
~~PHYS 281~~	~~General Physics I~~	
Social Science Gen. Ed. Requirement		3
	Credit Hours	13-14
Fourth Semester		

~~CSIT 213~~	~~Database Management~~	~~3~~
~~Select one of the following to fulfill the Lab Science Gen. Ed. Requirement:~~		~~4~~
CSIT 185	Networking I	3
or CSIT 213	or Database Management	
or CSIT 265	or Data Structures and Analysis	
CSIT Elective [1]		6
BIOL 162	General Biology II	4
or CHEM 182	or General Chemistry II	
or PHYS 282	or General Physics II	
~~CHEM 182~~	~~General Chemistry II~~	
~~PHYS 282~~	~~General Physics II~~	
Elective to meet 60 credits		1
	Credit Hours	14
	Total Credit Hours	60-61

[1] Can be chosen from all CSIT courses with the exception of CSIT 110, CSIT 123, CSIT 126, CSIT 131, CSIT 133 and CSIT 160

~~Program Requirements~~

Degree Requirements Breakdown

GCOM

Course Code & Title	Credits
ENGL 151	3
ENGL 152	3

GHUM

Course Code & Title	Credits
GEN ED HUMN	3

GSOC

Course Code & Title	Credits
GEN ED SOCIAL SCIENCE	3

GSOC/ GHUM

Course Code & Title	Credits
GEN ED HUMN OR SOCIAL SCIENCE	3

GMAT/ GSCI/ GTEC

Course Code & Title	Credits
MATH 265	4
CSIT 165	4

EXHIBIT B - 2

Course Code & Title	Credits
MATH 266	4
MATH 270 OR 275 OR 267	3
BIOL 161 OR CHEM 181 OR PHYS 281	4
BIOL 162 OR CHEM 182 OR PHYS 282	4

General Education

Course Code & Title	Credits
NA	0

Concentration Courses

Course Code & Title	Credits
CSIT 176	3
CSIT 185 OR CSIT 265 OR CSIT 213	6
CSIT 166	4
CSIT Electives	6
STSC 150	2

Elective Courses

Course Code & Title	Credits
Elective	1

Board Approval

History of Board approval dates

Board of Trustees Approval Date: May 4, 2004

Board of Trustees Approval Date: September 24, 2007

Board of Trustees Approval Date: December 1, 2008

Board of Trustees Approval Date: February 28, 2011

Board of Trustees Approval Date: February 25, 2013

Board of Trustees Approval Date: May 28, 2013

Board of Trustees Approval Date: December 08, 2016

Board of Trustees Approval Date: March 29, 2018

Reviewer

Comments

Key: 45

EXHIBIT B-3

Program Change Request

Date Submitted: 06/23/22 12:12 pm

Viewing: AS.CS.IT : Computer Science with Information Technology Option, Associate in Science

Last edit: 08/10/22 4:10 pm

Changes proposed by: Helga Paggi (hpaggi)

Catalog Pages Using this Program

Information Technology, an Option to the Associate in Science in Computer Scienc

Program Type	Associate of Science (AS)
Program Title	Computer Science with Information Technology Option, Associate in Science
Academic School	Science, Technology, Engineering, Mathematics
Effective Catalog Year	2023-2024
Program Code	AS.CS.IT
CIP Code	110101 - Computer and Information Sciences, General.

Program Description

In Workflow

1. **STEM Academic Administrator**
2. **STEM Dean**
3. **Director of Curriculum**
4. **Curriculum Committee Chair**
5. **Senate Chair**
6. **Vice President of Academic Affairs**
7. **President's Leadership Team Chair**
8. **President**
9. **Board of Trustees Chair**
10. Academic Administrator for Programs

Approval Path

1. 06/29/22 11:09 am Cynthia Fallon (cfallon): Approved for STEM Academic Administrator
2. 06/29/22 11:16 am Sylvia Riviello (sriviello): Approved for STEM Dean
3. 06/30/22 3:38 pm Susan O'Connor (soconnor): Approved for

Director of Curriculum
4. 07/15/22 9:48 am Heather Sciarappa (hsciarappa): Approved for Curriculum Committee Chair
5. 08/04/22 4:34 pm Robert Marchie (rmarchie): Approved for Senate Chair
6. 08/05/22 9:25 am Joseph Konopka (jkonopka): Approved for Vice President of Academic Affairs
7. 08/12/22 4:58 pm Connie Bello (cbello): Approved for President's Leadership Team Chair
8. 08/12/22 5:00 pm Connie Bello (cbello): Approved for President

The program outlined here will prepare students for transfer to a four-year college to obtain a Bachelor of Science degree in Computer Science and provide a solid base of knowledge for a career in Computer Information Technology. The curriculum closely follows program requirements of prominent four-year higher education institutions in New Jersey and is designed to address the preparation of our students for a future in Computer Information Technology. ~~computer information systems. The curriculum follows the model provided by the Association of Computing Machinery and the Institute of Electrical and Electronics Engineers Computer Society in order to assure maximumtransferability.The field of information technology is interdisciplinary, with applications to all aspects of theeconomy.Information technologists need a balance of software and hardware applications with concentration in specificcourses.~~This curriculum has been designed to prepare the student to meet the future needs of integration, design, deployment and management of computing, resources and services.

Program Objectives

Program Goals

	Program goals
PG1	NA

Program Learning Outcomes

	Students who successfully complete this program will be able to:
PLO1	Identify the basic concepts of the computer system and computer architecture including functions of an operating system, major computer data, instruction and addressing formats, and network protocols and topography.
PLO2	Recognize the problems involved in program portability and be able to identify the solutions to these problems.
PLO3	Describe the software life cycle.
PLO4	Identify the requirements and rationale for allocating static, dynamic and virtual memory.
PLO5	Discuss the rationale and implement both member and friend examples of operator overloading.
PLO6	Describe and implement sequential and binary search and common selection, exchange and insertion sorting algorithms. Analyze (big O) algorithms.

	Students who successfully complete this program will be able to:
PLO7	Demonstrate knowledge and skills in the areas of Computer Science to solve technical and computational problems.

Learning Outcomes Display (show only)

Course Code	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
FirstSemester							
ENGL 151							
MATH 265							
CSIT 165							
STSC 150							
SecondSemester							
ENGL 152							
MATH 266							
CSIT 166							
CSIT 176							
ThirdSemester							
MATH 267							
BIOL 161							
FourthSemester							
CSIT 185							

Course Code	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
BIOL 162							

Required Qualifications

Plan of Study Grid

First Semester		Credit Hours
ENGL 151	English I	3
MATH 265	Calculus I	4
CSIT 165	Programming I	4
Humanities Gen. Ed. Requirement		3
~~Social Science Gen. Ed. Requirement~~		~~3~~
STSC 150	Student Success Seminar	2
	Credit Hours	16
Second Semester		
ENGL 152	English II	3
~~MATH 265~~	~~Calculus I~~	~~4~~
MATH 266	Calculus II	4
CSIT 166	Programming II	4
CSIT 176	Computer Organization & Architecture	3
Humanities or Social Science Gen. Ed. Requirement		3
	Credit Hours	17
Third Semester		
~~MATH 266~~	~~Calculus II~~	~~4~~
~~CSIT 185~~	~~Networking I~~	~~3~~
~~CSIT 265~~	~~Data Structures and Analysis~~	~~4~~
~~Select one of the following to fulfill the Lab Science Gen. Ed. Requirement:~~		~~4~~
CSIT Elective [1]		3
MATH 267	Calculus III	3-4
or MATH 270	or Discrete Mathematics	
or MATH 275	or Linear Algebra	
BIOL 161	General Biology I	4
or CHEM 181	or General Chemistry I	
or PHYS 281	or General Physics I	
~~CHEM 181~~	~~General Chemistry I~~	
~~PHYS 281~~	~~General Physics I~~	
Social Science Gen. Ed. Requirement		3
	Credit Hours	13-14
Fourth Semester		

~~CSIT 213~~	~~Database Management~~	~~3~~
~~Select one of the following to fulfill the Lab Science Gen. Ed. Requirement:~~		~~4~~
CSIT 185	Networking I	3
or CSIT 213	or Database Management	
or CSIT 265	or Data Structures and Analysis	
CSIT Elective [1]		6
BIOL 162	General Biology II	4
or CHEM 182	or General Chemistry II	
or PHYS 282	or General Physics II	
~~CHEM 182~~	~~General Chemistry II~~	
~~PHYS 282~~	~~General Physics II~~	
Elective to meet 60 credits		1
	Credit Hours	14
	Total Credit Hours	60-61

[1] Can be chosen from all CSIT courses with the exception of CSIT 110, CSIT 123, CSIT 126, CSIT 131, CSIT 133 and CSIT 160

~~Program Requirements~~

Degree Requirements Breakdown

GCOM

Course Code & Title	Credits
ENGL 151	3
ENGL 152	3

GHUM

Course Code & Title	Credits
GEN ED HUMN	3

GSOC

Course Code & Title	Credits
GEN ED SOCIAL SCIENCE	3

GSOC/ GHUM

Course Code & Title	Credits
GEN ED HUMN OR SOCIAL SCIENCE	3

GMAT/ GSCI/ GTEC

Course Code & Title	Credits
MATH 265	4
CSIT 165	4

Course Code & Title	Credits
MATH 266	4
MATH 270 OR 275 OR 267	3
BIOL 161 OR CHEM 181 OR PHYS 281	4
BIOL 162 OR CHEM 182 OR PHYS 282	4

General Education

Course Code & Title	Credits
NA	0

Concentration Courses

Course Code & Title	Credits
CSIT 176	3
CSIT 185 OR CSIT 265 OR CSIT 213	6
CSIT 166	4
CSIT Electives	6
STSC 150	2

Elective Courses

Course Code & Title	Credits
Elective	1

Board Approval

History of Board approval dates

Board of Trustees Approval Date: May 4, 2004

Board of Trustees Approval Date: September 24, 2007

Board of Trustees Approval Date: December 1, 2008

Board of Trustees Approval Date: February 28, 2011

Board of Trustees Approval Date: February 25, 2013

Board of Trustees Approval Date: May 28, 2013

Board of Trustees Approval Date: December 08, 2016

Board of Trustees Approval Date: March 29, 2018

Reviewer
Comments

Key: 45

EXHIBIT B-4

Program Change Request

Date Submitted: 06/21/22 12:21 pm

Viewing: AS.ES : Environmental Studies, Associate in Science

Last edit: 07/14/22 4:19 pm

Changes proposed by: Caterina Gibson (cgibson)

Catalog Pages Using this Program

Environmental Science, Associate in Science

Program Type	Associate of Science (AS)
Program Title	Environmental Studies, Associate in Science
Academic School	Science, Technology, Engineering, Mathematics
Effective Catalog Year	2023-2024
Program Code	AS.ES
CIP Code	n/a - n/a

Program Description

In Workflow

1. **STEM Academic Administrator**
2. **STEM Dean**
3. **Director of Curriculum**
4. **Curriculum Committee Chair**
5. **Senate Chair**
6. **Vice President of Academic Affairs**
7. **President's Leadership Team Chair**
8. **President**
9. **Board of Trustees Chair**
10. Academic Administrator for Programs

Approval Path

1. 06/21/22 12:41 pm Cynthia Fallon (cfallon): Approved for STEM Academic Administrator
2. 06/21/22 4:22 pm Sylvia Riviello (sriviello): Approved for STEM Dean
3. 06/30/22 3:33 pm Susan O'Connor (soconnor): Approved for

EXHIBIT B - 4

Director of Curriculum
4. 07/14/22 4:27 pm Heather Sciarappa (hsciarappa): Approved for Curriculum Committee Chair
5. 08/04/22 4:33 pm Robert Marchie (rmarchie): Approved for Senate Chair
6. 08/05/22 9:25 am Joseph Konopka (jkonopka): Approved for Vice President of Academic Affairs
7. 08/12/22 4:58 pm Connie Bello (cbello): Approved for President's Leadership Team Chair
8. 08/12/22 5:00 pm Connie Bello (cbello): Approved for President

This program is designed to prepare students for careers in the dynamic field of environmental science, which is concerned with monitoring humanity's impact on the Earth and solving environmental problems. Students graduating from this program might work in environmental education centers, public relations firms, testing labs, environmental research organizations, travel/tourism (ecotourism companies), food manufacturers, waste management companies or government agencies. The program provides students with a strong background in the natural sciences.

Program Objectives

EXHIBIT B - 4

Program Goals

	Program goals
PG1	NA

Program Learning Outcomes

	Students who successfully complete this program will be able to:
PLO1	Demonstrate comprehension of ecosystems structure and functions.
PLO2	Analyze community habitat dynamics.
PLO3	Discuss the natural cycles that influence the environment and living organisms.
PLO4	Identify and critically analyze environmental dilemmas and processes.
PLO5	Demonstrate application of critical thinking and team work in classroom and in the field.
PLO6	Discuss the dynamics between environmental ethics, economic and social values and their impact on the Earth in both the immediate time and the future.
PLO7	Demonstrate knowledge and skill in using the latest instrumentation techniques and methodologies used in environmental science.
PLO8	Demonstrate application of critical thinking in classroom and in the field.
PLO9	Communicate effectively in speech and writing using the terminology that is unique to environmental science.
PLO10	10. Use critical thinking and problem solving skills in analyzing environmental science problems. 11. Use accepted scientific methods in collecting, organizing and evaluating the data gathered and draw a data supported conclusion. 12. Recognize and appropriately respond to ethical issues in the field of environmental science.

Learning Outcomes Display (show only)

Course Code	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10

Course Code	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10
FirstSemester										
ENGL 151										
BIOL 161										
ENVI 152										
STSC 150										
SecondSemester										
ENGL 152										
MATH 156										
BIOL 162										
CHEM 181										
ThirdSemester										
CHEM 182										
BIOL 101										
BIOL 261										
BIOL 265										

EXHIBIT B - 4

Course Code	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10
ENVI 232										
ENVI 259										
CHEM 283										
CHEM 284										
ENVI 121										
ENVI 134										
ENVI 142										
ENVI 159										
ENVI 205										
ENVI 210										
ENVI 217										
ENVI 220										
ENVI 241										

Course Code	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10
BIOL 101										
BIOL 261										
BIOL 265										
ENVI 232										
ENVI 259										
CHEM 283										
CHEM 284										
ENVI 121										
ENVI 134										
ENVI 142										
ENVI 159										
ENVI 205										
ENVI 210										

Course Code	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10
ENVI 217										
ENVI 220										
ENVI 241										
FirstSemester										
ENGL 151										
BIOL 161										
ENVI 152										
STSC 150										
SecondSemester										
ENGL 152										
MATH 156										
BIOL 162										
CHEM 181										
ThirdSemester										
CHEM 182										

EXHIBIT B - 4

Required Qualifications

Program Requirements

Plan of Study Grid

First Semester		Credit Hours
ENGL 151	English I	3
BIOL 161	General Biology I	4
MATH 165 or Higher [1]		5
ENVI 152	Environmental Sci	4
STSC 150	Student Success Seminar	2
	Credit Hours	18
Second Semester		
ENGL 152	English II	3
MATH 156	Introduction to Statistics	3
BIOL 162	General Biology II	4
CHEM 181	General Chemistry I	4
	Credit Hours	14
Third Semester		
CHEM 182	General Chemistry II	4
Environmental Studies Program Elective(s)		7
Humanities Gen. Ed. Requirement		3
	Credit Hours	14
Fourth Semester		
Environmental Studies Program Elective		4
Humanities Gen. Ed. Requirement		3
Social Science Gen. Ed. Requirement		3
Technology Gen. Ed. Requirement [2]		3
Elective to meet 60 credits		1
	Credit Hours	14
	Total Credit Hours	60

1

Note regarding math requirement: Some bachelor's degree programs in science require Calculus; completion of at least MATH 191 Precalculus I & MATH 192 Precalculus II is recommended to transfer. MATH 156 Introduction to Statistics and MATH 165 College Algebra are recommended for transfer to programs that do not require Calculus.

.

2

Students may attempt to "test out" of the technology requirement. If they succeed, they must take an additional course(s) in math or science from the List of Approved General Education Courses.

Environmental Studies Program Electives

BIOL 101	The Pine Barrens	3
BIOL 261	Ecology	4
BIOL 265	Marine Biology	4
ENVI 232	Environmental Policy	3
ENVI 259	Field Experience/Practicum	3
CHEM 283	Organic Chemistry I	4
CHEM 284	Organic Chemistry II	4
ENVI 121	Renewable Energy	3
ENVI 134	Carbon Footprint Analysis	3
ENVI 142	Industrial Hygiene	4
ENVI 159	Natural Resources Conservation	4
ENVI 205	Hazardous Materials Management	3
ENVI 210	Indoor Environmental Quality	3
ENVI 217	Occupational Safety and Health	3
ENVI 220	Life Cycle Analysis	3
ENVI 241	Environmental Sustainability	3

Degree Requirements Breakdown

GCOM

Course Code & Title	Credits
NA	N/A

GHUM

Course Code & Title	Credits
NA	N/A

GSOC

Course Code & Title	Credits
NA	N/A

GSOC/ GHUM

Course Code & Title	Credits
NA	N/A

GMAT/ GSCI/ GTEC

Course Code & Title	Credits
NA	N/A

General Education

Course Code & Title	Credits
NA	N/A

Concentration Courses

Course Code & Title	Credits
NA	N/A

Elective Courses

Course Code & Title	Credits
NA	N/A

Board Approval

History of Board approval dates

Board of Trustees Approval Date: May 29, 2007

Board of Trustees Approval Date: March 24, 2008

Board of Trustees Approval Date: December 1, 2008

Board of Trustees Approval Date: August 24, 2009

Board of Trustees Approval Date: December 6, 2010

Board of Trustees Approval Date: November 4, 2013

Board of Trustees Approval Date: April 28, 2014

Board of Trustees Approval Date: January 24, 2019

Reviewer Comments

Key: 21

EXHIBIT B-5

Course Change Request

Date Submitted: 03/17/22 1:47 pm

Viewing: CHEM 182 : General Chemistry II

Last approved: 04/29/21 4:00 am

Last edit: 03/17/22 1:47 pm

Changes proposed by: Scott Farrell (sfarrell)

Catalog Pages
referencing this
course

Approved General Education Courses
Approved General Education Courses
Chemistry (CHEM)

Programs
referencing this
course

AS.CS: Computer Science, Associate in Science
AS.CS.CIS: Computer Science with Cyber-Information Security Option, Associate in Science
AS.ENGR: Engineering, Associate in Science
AS.ES: Environmental Studies, Associate in Science
AS.CS.GDD: Computer Science with Game Development & Design Option, Associate in Science
AS.CS.IT: Computer Science with Information Technology Option, Associate in Science
AS.CHEM: Chemistry, Associate in Science

Learning Outcomes
Display (show only)

In Workflow

1. STEM Academic Administrator
2. STEM Dean
3. Director of Curriculum
4. Curriculum Committee Chair
5. Senate Chair
6. Vice President of Academic Affairs
7. President's Leadership Team Chair
8. President
9. Board of Trustees Chair
10. STEM Academic Administrator
11. Colleague

Approval Path

1. 03/17/22 3:19 pm Cynthia Fallon (cfallon): Approved for STEM Academic Administrator
2. 05/09/22 11:34 am Sylvia Riviello (sriviello): Approved for STEM Dean
3. 05/16/22 10:15 am Susan O'Connor (soconnor): Approved for

Director of Curriculum
4. 06/15/22 2:07 pm Heather Sciarappa (hsciarappa): Approved for Curriculum Committee Chair
5. 08/04/22 4:33 pm Robert Marchie (rmarchie): Approved for Senate Chair
6. 08/05/22 9:25 am Joseph Konopka (jkonopka): Approved for Vice President of Academic Affairs
7. 08/12/22 5:04 pm Connie Bello (cbello): Approved for President's Leadership Team Chair
8. 08/12/22 5:06 pm Connie Bello (cbello): Approved for President

History

1. Apr 29, 2021 by Susan O'Connor (soconnor)

AS.CHEM: Chemistry, Associate in Science

1. Course Information

Subject	CHEM - Chemistry

School	Science, Technology, Engineering, Mathematics
Course Title	General Chemistry II

2. Hours

Semester Hours	4.00000
Lecture	3.00
Lab	2.00
Practicum	

3. Catalog Description

For display in the online catalog

This course is intended for science majors and is the second of a two-course sequence. Course topics include colligative properties, chemical equilibrium, acid-base chemistry, kinetics, thermodynamics, electrochemistry, and nuclear chemistry. The laboratory work involves analytical and spectrophotometric techniques relating to lecture topics.

4. Requisites

Prerequisites

CHEM 181

Corequisites

NONE

5. Course Type

Course Type for Perkins Reporting	non-vocational (not approved for Perkins funding)

6. Justification

Describe the need for this course

This course is required for bachelor-level degree programs in science, engineering, and in many health-related pre-professional disciplines.

EXHIBIT B - 5

7. General Education

Will the college submit this course to the statewide General Education Coordinating Committee for approval as a course, which satisfies a general education requirement?

Yes

General Education Category

Lab Science

General Education Status Approved

8. Consistency with the Vision and Mission Statements, the Academic Master Plan, and the strategic initiatives of the College

Please describe how this course is consistent with Ocean County College's current Vision Statement, Mission Statement, Academic Master Plan, and the strategic initiatives of the College:

	Add item
1	Demonstrating the college's commitment to offer comprehensive educational programs that develop intentional learners of all ages. (Mission Statement)
2	Seeking to ensure that students will thrive in an increasingly diverse and complex world. (Vision Statement)
3	Preparing students for successful transfer to other educational institutions and/or for entrance into the workforce. (Academic Master Plan)
4	Seeking to empower students through the mastery of intellectual and Practical Skills. (Academic Master Plan)
5	Challenging students to transfer information into knowledge and knowledge into action. (Academic Master Plan)

9. Related Courses at Other Institutions

Comparable Courses at NJ Community Colleges

EXHIBIT B - 5

Institution	Brookdale CC
Course Title	General Chemistry II
Course Number	CHEM 102
Number of Credits	5

Comments

Requires a pre-req of a C or better in CHEM 101

Institution	Mercer County CC
Course Title	General Chemistry II
Course Number	CHE 102
Number of Credits	4

Comments

Requires a pre-req of a C or better in CHE 101

Institution	Atlantic Cape CC
Course Title	General Chemistry II
Course Number	CHEM 111
Number of Credits	4

Comments

Requires a pre-req of a C or better in CHEM 110

Transferability of Course

Georgian Court University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
General Chemistry II CHEM 114 4 cr.	Major, Gen. Ed.	

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
CHEM 1084 General Chemistry II 4 cr.	Major, Gen. Ed.	

Monmouth University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
General Chemistry II CE 112	Major, Gen. Ed.	

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
General Chemistry II CHEM 06101 4 cr.	Major, Gen. Ed.	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
General Chemistry II 01:160:162 4 cr.	Major, Gen. Ed.	

Stockton University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
Chemistry IV: Theory & Application CHEM 2140 4 cr.	Major, Gen. Ed.	

If not transferable to any institution, explain:

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:

	Students who successfully complete this course will be able to:
CLO1	Define each of the following terms: • Exothermic processes • Endothermic processes • Colligative properties • Entropy • Three laws of thermodynamics • Electrode • Oxidation • Reduction • Inner transition element
CLO2	List actions that would increase the rate of a chemical reaction.
CLO3	Given a table of reactant concentrations and rate data, determine the corresponding rate law.
CLO4	Given the half-life equation and a radioisotope's half-life, calculate the rate constant.
CLO5	Given a chemical system at equilibrium: • Determine the effect of adding a common ion • Calculate the concentration of species in solution.
CLO6	Describe how intermolecular forces affect a solution's heat of vaporization.
CLO7	Describe the effect of solution concentration on: • Freezing point • Boiling point • Osmotic pressure.
CLO8	Given an acid's molar concentration, calculate the solution's pH.
CLO9	Describe how the pH scale is affected by acid concentration.
CLO10	List the properties of the transition metals including: • Ability to form colored compounds • Ability to form complex ions • Possessing multiple oxidation states
CLO11	Calculate Entropy and Free energy of a reaction.
CLO12	Determine if a reaction will be spontaneous
CLO13	Balance Redox Equations.
CLO14	State how a nuclear reaction's rate is persistent.

	Students who successfully complete this course will be able to:
CLO15	Given a nuclear equation and it's mode of decay, determine the identity of the daughter nuclide.

11. Topical Outline

(include as many themes/skills as needed)

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
TO1	Intermolecular Forces, Liquids & Solids Ion-ion interactions, Ion-Dipole interactions, Dipole-Dipole interactions, Hydrogen bonding, Dispersion forces, phase changes	Lab Experiment	Test, Laboratory experiment	CLO1
TO2	Solutions & Their Behavior Molality, Factors that affect solubility, Colligative properties	Lab Experiment	Test, Laboratory experiment	CLO1, CLO6, CLO7
TO3	3 Chemical Kinetics Reaction Rates; Concentration, temperature and catalysts effects on reaction rate; reaction mechanism	Lab Experiment	Test, Laboratory experiment	CLO2, CLO3, CLO4
TO4	Chemical Equilibria Equilibrium constants K, Reaction Quotient Q, Le Châtelier's Principle	Lab Experiment	Test, Laboratory experiment	CLO5

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
TO5	Chemistry of Acids & Bases Bronsted-Lowry acid and bases, pH, pOH, Ka, Kb, strong acids/bases, weak acids/bases	Lab Experiment	Test, Laboratory experiment	CLO8, CLO9
TO6	Aqueous Equilibria Buffers, Solubility, Ksp, common ion effect	Lab Experiment	Test, Laboratory experiment	CLO5
TO7	Entropy & Free Energy Entropy S, Gibb's Free energy G, Second law of thermodynamics, Third law of Thermodynamics, predicting spontaneity of a reaction	Lab Experiment	Test, Laboratory experiment	CLO1, CLO11, CLO12
TO8	Electron Transfer Reaction Redox equations, Galvanic Cells, Ecell, Nernst equation, batteries, electrolysis	Lab Experiment	Test, Laboratory experiment	CLO1, CLO13
TO9	Chemistry of Transition Elements Lewis acid and bases, complex ions, coordination compounds	Test	Test	CLO10
TO10	Nuclear Chemistry Kinetics of radioactive decay, Nuclear Fission, Nuclear Fusion	Lab Experiment	Test, Laboratory experiment	CLO4, CLO14, CLO15

12. Methods of Instruction

In the structuring of this course, what major methods of instruction will be utilized?

Lecture/Discussion/Laboratory Experimentation

13. General Education Goals Addressed by this Course (this section is to fulfill state requirements)

Information

Communication-Written and Oral

Quantitative Knowledge and Skills Yes

Related Course Learning Outcome: CLO3, CLO3, CLO5, CLO6, CLO7, CLO8, CLO9, CLO11, CLO12, CLO13, CLO14

Related Outline Component: TO2, TO3, TO4, TO5, TO6, TO7, TO8, TO10

Assessment of General Education Goal (Recommended but not limited to)

Test, Laboratory Experiment

Scientific Knowledge and Reasoning Yes

Related Course Learning Outcome: CLO1, CLO2, CLO3, CLO4, CLO5, CLO6, CLO7, CLO8, CLO9, CLO10, CLO11, CLO12, CLO13, CLO14, CLO15

Related Outline Component: TO1, TO2, TO3, TO4, TO5, TO6, TO7, TO8, TO9, TO10

Assessment of General Education Goal (Recommended but not limited to)

Test, Laboratory Experiment

Technological Competency

Information Literacy

Society and Human Behavior

Humanistic Perspective

Historical Perspective

Global and Cultural Awareness

Ethical Reasoning and Action

Independent/Critical Thinking Yes

Related Course Learning Outcome	CLO1, CLO2, CLO3, CLO4, CLO5, CLO6, CLO7, CLO8, CLO9, CLO10, CLO11, CLO12, CLO13, CLO14, CLO15
Related Outline Component	TO1, TO2, TO3, TO4, TO5, TO6, TO7, TO8, TO9, TO10

Assessment of General Education Goal (Recommended but not limited to)

Test, Laboratory Experiment

14. Needs

Instructional Materials (text etc.):

An appropriate text will be selected. Contact the department for current adoptions. A Calculator with logarithmic functions and safety goggles are required.

Technology Needs:

Computers with internet capability, Excel, Molecular Modeling Microsoft Office. Laboratory technology appropriate for planned experiments.

Human Resource Needs (Presently Employed vs. New Faculty):

Presently employed and Adjunct Faculty.

Facility Needs:

Laboratory setting and appropriate laboratory materials.

Library needs:

15. Grade Determinants

The final grade in the course will be the cumulative grade based on the following letter grades or their numerical equivalents for the course assignments and examinations

A: Excellent

B+: Very Good

B: Good

C+: Above Average

C: Average

D: Below Average

F: Failure

I: Incomplete

R: Audit

For more detailed information on the Ocean County College grading system, please see Policy #5154.

16. Board Approval

History of Board approval dates

Revised: December, 1990

Revised: February 27, 1996

Revised: April 30, 1996

Revised: December, 1998

Revised: May 4, 2004

Revised: August 18, 2005

Revised: August 27, 2007

Revised: April 27, 2009

Revised: May 22, 2012

Board of Trustees Approval Date: January 26, 2017

Reviewer

Comments

Key: 310

EXHIBIT B-6

EXHIBIT B - 6

Course Change Request

Date Submitted: 06/16/22 1:06 pm

Viewing: CSIT 175 : Digital Logic & Circuits

Last approved: 10/27/21 1:18 pm

Last edit: 07/14/22 4:24 pm

Changes proposed by: Cynthia Fallon (cfallon)

Catalog Pages referencing this course

Computer Science/ Information Technology (CSIT)

Learning Outcomes Display (show only)

In Workflow

1. **STEM Academic Administrator**
2. **STEM Dean**
3. **Director of Curriculum**
4. **Curriculum Committee Chair**
5. **Senate Chair**
6. **Vice President of Academic Affairs**
7. **President's Leadership Team Chair**
8. **President**
9. **Board of Trustees Chair**
10. STEM Academic Administrator
11. Colleague

Approval Path

1. 06/16/22 1:06 pm Cynthia Fallon (cfallon): Approved for STEM Academic Administrator
2. 06/16/22 1:20 pm Sylvia Riviello (sriviello): Approved for STEM Dean
3. 06/30/22 3:33 pm Susan O'Connor (soconnor): Approved for

Director of Curriculum
4. 07/14/22 4:28 pm Heather Sciarappa (hsciarappa): Approved for Curriculum Committee Chair
5. 08/04/22 4:33 pm Robert Marchie (rmarchie): Approved for Senate Chair
6. 08/05/22 9:25 am Joseph Konopka (jkonopka): Approved for Vice President of Academic Affairs
7. 08/12/22 5:05 pm Connie Bello (cbello): Approved for President's Leadership Team Chair
8. 08/12/22 5:06 pm Connie Bello (cbello): Approved for President

History

1. Oct 15, 2021 by Edmond Hong (ehong)
2. Oct 27, 2021 by Susan O'Connor (soconnor)

1. Course Information

EXHIBIT B - 6

Subject	CSIT - Computer Science/ Information Technology
School	Science, Technology, Engineering, Mathematics
Course Title	Digital Logic & Circuits

2. Hours

Semester Hours	3
Lecture	3
Lab	0
Practicum	0

3. Catalog Description

For display in the online catalog

This course introduces the fundamentals of digital logic and logic circuits implementation in digital computers, robotics and electronic control systems. The students will learn the digital concepts, numbering systems, Boolean function, ~~algebra,~~ as well as logic gates, combinational logic, sequential logic and their applications in computer CPU, memory, and other devices. Additional topics include concepts of integrated circuits and programmable logic which will be introduced to expand students' vision. The content of this course can work as preparation for Computer Organization and Architecture. Open lab time required.

4. Requisites

Prerequisites

None

Corequisites

None

5. Course Type

Course Type for Perkins Reporting	vocational (approved for Perkins funding)

6. Justification

Describe the need
for this course

This can be used as an elective for any computer science, engineering, and mechatronics related program.

7. General Education

Will the college submit this course to the statewide General Education Coordinating Committee for approval as a course, which satisfies a general education requirement?

No

If the course does not satisfy a general education requirement, which of the following does it satisfy:

Elective

8. Consistency with the Vision and Mission Statements, the Academic Master Plan, and the strategic initiatives of the College

Please describe how this course is consistent with Ocean County College's current Vision Statement, Mission Statement, Academic Master Plan, and the strategic initiatives of the College:

	Add item
1	Providing student-centered, high quality educational experiences that prepare and empower diverse learners (Mission Statement)
2	Cultivating a technologically progressive spirit (Mission Statement)
3	Providing and supporting the delivery of high quality, relevant, and emerging STEM courses (Academic Master Plan)

9. Related Courses at Other Institutions

Comparable Courses at NJ Community Colleges

Institution	Brookdale CC
Course Title	Computer Logic and Design

EXHIBIT B - 6

Course Number	COMP-126
Number of Credits	3
Comments	

Institution	Mercer County CC
Course Title	Digital Circuit Fundamentals
Course Number	EET 251
Number of Credits	4
Comments	

Institution	Raritan Valley CC
Course Title	Digital Logic Design
Course Number	ENGR 215
Number of Credits	4
Comments	

Institution	Hudson County CC
Course Title	Computer Logic & Discrete Math
Course Number	CSC 113
Number of Credits	3
Comments	

Transferability of Course

Georgian Court University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
Elective Credits (3 credits)	Elective	

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
TECHX1003 Technology ~~CPS1231~~ (3 credits)	Elective ~~Math~~	

Monmouth University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
~~IT250:~~CS002 200 ~~INTERNET AND NETWORK TECHNOLOGY~~ (3 credits)	200-Level Computer Science elective ~~Major~~	

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
~~INTR99088:~~ECE 09241, Digital I ~~GENERAL EDUCATION COURSE~~ (3 credits)	Elective ~~General Education~~	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
~~01198110 Principles of Computer Science (with a combination of coursework) or Computer Science Elective 3-credits~~	~~Major Elective course~~	Unable to determine status

Stockton University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
COMP SCIENCE & INFO SYS ELECTIVE (3 credits)	Elective	

If not transferable to any institution, explain:

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:
CLO1	Explain the concepts of digital logic.
CLO2	Distinguish among the numbering systems (binary, octal, decimal and hexadecimal, etc.) and perform conversions.
CLO3	Illustrate logic gates (AND, OR, NAND, NOR, XOR, inverter, etc.) and logical functions.
CLO4	Analyze combinational logic circuits using the rules of Boolean algebra, Karnaugh maps, and DeMorgan`s theorem.
CLO5	Simulate and build combinational logic circuits using commonly used logic IC chips.
CLO6	Illustrate the functional operation and characteristics of logic devices such as encoders, decoders, multiplexers, and flip-flops.
CLO7	Analyze sequential logic circuits utilizing timing diagrams and applications of memory devices and counters.
CLO8	Conceptually design computer hardware using logic circuits.
CLO9	Explore the concepts and usage of large-scale integrated circuits, Programmable Logic Array (PLA), Field Programmable Gate Array (FPGA), and other new technologies.

11. Topical Outline

(include as many themes/skills as needed)

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
TO1	Digital Concepts a. Analog and digital signals and waveforms b. Overview of digital logic functions c. Digital logic test and measurement	• Reading of textbook • Homework exercises • Class discussion	Exam	CLO1
TO2	Number Systems & Conversions a. Decimal numbers b. Binary numbers c. Octal, hexadecimal, and other numbers d. Conversions among the number systems e. Introduction to various digital codes	• Reading of textbook • Homework exercises • Internet research • Real case analysis	Exam	CLO2
TO3	Logic Gates and truth table a. AND and OR gates and truth table b. Inverter and truth table c. NAND, NOR gates and truth table d. X-OR and X-NOR gates and truth table e. 7400 serials logic IC chips f. Building logic circuits	• Reading of textbook • Homework exercises • Hands-on lab	Exam and Lab assignment	CLO3

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
TO4	Boolean Algebra and Combinational Logic Circuit Analysis a. Boolean algebra b. DeMorgan's Law c. Karnaugh maps d. Simplification techniques using different methods e. Logic circuits simulation using computer software	• Reading of textbook • Homework exercises • Internet research	Exam	CLO4, CLO5
TO5	Combinational Logic Circuits a. Complex logic circuits b. Encoders/decoders and applications c. Multiplexers/demultiplexers and applications d. Latches and applications e. Control circuits design	• Reading of textbook • Class discussion • Hands-on lab	Exam and project	CLO5, CLO6
TO6	Sequential Logic Circuits a. Timing diagram and logic event analysis b. Different types of flip-flops and applications c. Various type of registers and memories d. Various type of counters	• Reading of textbook • Real case analysis • Hands-on lab	Exam and project	CLO7

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
TO7	Logic Circuits in Digital Computers and Advance Topics a. Logic circuits in an ALU b. Logic circuits in a CPU c. Logic circuits in a computer bus controller d. ROM, PROM, EPROM, EEPROM, etc. e. Introduction to PLA and FPGA	• Reading of textbook • Internet research • Class discussion • Real case analysis	Exam	CLO8, CLO9

12. Methods of Instruction

In the structuring of this course, what major methods of instruction will be utilized?

Class lecture, discussion, demonstrations, lab assignments, online learning, and presentations.

13. General Education Goals Addressed by this Course (this section is to fulfill state requirements)

Information

Communication-Written and Oral

_____

Quantitative Knowledge and Skills

_____

Scientific Knowledge and Reasoning

_____

Technological Competency Yes

Related Course Learning Outcome: CLO1 - CLO9

Related Outline Component: TO1 - TO7

Assessment of General Education Goal (Recommended but not limited to)

Exams & projects

Information Literacy

Society and Human Behavior

Humanistic Perspective

Historical Perspective

Global and Cultural Awareness

Ethical Reasoning and Action

Independent/Critical Thinking: Yes

Related Course Learning Outcome: CLO1 - CLO9

Related Outline Component: TO1 - TO7

Assessment of General Education Goal (Recommended but not limited to)

Exams & projects

14. Needs

Instructional Materials (text

etc.):

Appropriate textbooks or OER materials will be selected by the department. Circuit lab kits needed for individual student.

Technology Needs:

None

Human Resource Needs (Presently Employed vs. New Faculty):

Existing faculties.

Facility Needs:

None

Library needs:

None

15. Grade Determinants

The final grade in the course will be the cumulative grade based on the following letter grades or their numerical equivalents for the course assignments and examinations

A: Excellent

B+: Very Good

B: Good

C+: Above Average

C: Average

D: Below Average

F: Failure

I: Incomplete

R: Audit

For more detailed information on the Ocean County College grading system, please see Policy #5154.

16. Board Approval

History of Board

approval dates

New course board approved: May 20, 2021

Reviewer

Comments

Key: 2233

EXHIBIT B-7

EXHIBIT B - 7

Course Change Request

Date Submitted: 05/09/22 10:44 am

Viewing: FRSC ~~SCIE~~ 105 : Forensic Science

Also listed as: ~~SCIE 105~~

Formerly known as: SCIE 105

Last approved: 10/27/21 1:23 pm

Last edit: 05/09/22 10:44 am

Changes proposed by: Johanna Riemen (jriemen)

Catalog Pages referencing this course

SCIE 105:

Approved General Education Courses

Approved General Education Courses

Forensic Science/Science (SCIE)

Programs referencing this course

SCIE 105:

AS.CJ: Criminal Justice, Associate in Science

Learning Outcomes

Display (show only)

In Workflow

1. **STEM Academic Administrator**
2. **BS Academic Administrator**
3. **STEM Dean**
4. **BS Dean**
5. **Director of Curriculum**
6. **Curriculum Committee Chair**
7. **Senate Chair**
8. **Vice President of Academic Affairs**
9. **President's Leadership Team Chair**
10. **President**
11. **Board of Trustees Chair**
12. STEM Academic Administrator
13. BS Academic Administrator
14. Colleague

Approval Path

1. 05/09/22 11:26 am Cynthia Fallon (cfallon): Approved for STEM Academic Administrator
2. 05/09/22 11:27 am Johanna Riemen (jriemen): Approved

for BS Academic Administrator

3. 05/09/22 11:34 am Sylvia Riviello (sriviello): Approved for STEM Dean
4. 05/25/22 9:48 am Rosann Bar (rbar): Approved for BS Dean
5. 06/06/22 4:26 pm Susan O'Connor (soconnor): Approved for Director of Curriculum
6. 06/15/22 2:07 pm Heather Sciarappa (hsciarappa): Approved for Curriculum Committee Chair
7. 08/04/22 4:33 pm Robert Marchie (rmarchie): Approved for Senate Chair
8. 08/05/22 9:25 am Joseph Konopka (jkonopka): Approved for Vice President of Academic Affairs
9. 08/12/22 5:05 pm Connie Bello (cbello): Approved for President's Leadership Team Chair
10. 08/12/22 5:06 pm Connie Bello

EXHIBIT B - 7

(cbello): Approved for President

History

1. Oct 27, 2021 by Susan O'Connor (soconnor)

1. Course Information

Subject	FRSC ~~SCIE~~ - Forensic Science
School	Business and Social Sciences ~~Science, Technology, Engineering, Mathematics~~
Course Title	Forensic Science

2. Hours

Semester Hours	4.00000
Lecture	3.00
Lab	2.00
Practicum	0

3. Catalog Description

For display in the online catalog

Forensic science is the study and application of science to the processes of law; it involves the recognition, collection, documentation, and preservation of physical evidence. This introductory course in forensic science explains how to apply basic scientific principles of biology, chemistry, and physics to physical evidence that is collected at crime scenes. In the laboratory, emphasis will be on scientific methods utilized in the examination of various items of physical evidence, such as fingerprints, impressions, DNA, hairs, fibers, drugs, paint, and fire debris.

4. Requisites

Prerequisites

None (preference given to Criminal Justice majors)

Corequisites

None

5. Course Type

Course Type for Perkins Reporting: vocational (approved for Perkins funding)

6. Justification

Describe the need for this course

This course can be used to satisfy the General Education Laboratory Science requirement for all students. This course will also meet the needs of Ocean County College Criminal Justice students who wish to transfer to Kean@Ocean.

7. General Education

Will the college submit this course to the statewide General Education Coordinating Committee for approval as a course, which satisfies a general education requirement?

Yes

General Education Category

Lab Science

General Education Status: Approved

8. Consistency with the Vision and Mission Statements, the Academic Master Plan, and the strategic initiatives of the College

Please describe how this course is consistent with Ocean County College's current Vision Statement, Mission Statement, Academic Master Plan, and the strategic initiatives of the College:

Add item

	Add item
1	Demonstrating the college's commitment to offer comprehensive educational programs that develop intentional learners of all ages. (Mission Statement)
2	Seeking to ensure that students will thrive in an increasingly diverse and complex world. (Vision Statement)
3	Preparing students for successful transfer to other educational institutions and/or for entrance into the workforce. (Academic Master Plan)
4	Seeking to empower students through the mastery of intellectual and practical skills. (Academic Master Plan)
5	Challenging students to transfer information into knowledge and knowledge into action. (Academic Master Plan)

9. Related Courses at Other Institutions

Comparable Courses at NJ Community Colleges

Institution	Brookdale CC
Course Title	Forensic Investigation
Course Number	CRJU-204
Number of Credits	3
Comments	

Institution	Rowan College at Burlington County
Course Title	Criminalistics
Course Number	CRJ-114
Number of Credits	3
Comments	Formerly Burlington CC.

Institution	Camden County College
Course Title	Intro. To Forensic Chemistry
Course Number	CHM-145
Number of Credits	4
Comments	

Transferability of Course

Georgian Court University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
3 Credits CJ 221 Forensics	Criminal Justice Major	

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
3 Credits FEX 1001	General Education: Science and Math Area – prior approval needed	

Monmouth University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
3 Credits CJ 280	3 Credits as CJ 280 course and 1 Credit as a free Elective	

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
3 Credits ASTR 17070	General Education , Lab Science	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
3 Credits	Elective Credit	

Stockton University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
3 Credits CRIM 3210	General Ed: Social and Behavioral Sciences	

If not transferable to any institution, explain:

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:
CLO1	Conduct basic crime scene management and preservation of crime scene integrity.
CLO2	Collect, examine, and preserve evidence using scientific principles.
CLO3	Use basic organic and inorganic analytical methods to process crime scene evidence.
CLO4	Demonstrate proficiency in the use of various types of light microscopes and gas chromatography when used to examine evidence.
CLO5	Demonstrate a working knowledge of hair, fibers, paint and fingerprint collection and analysis.
CLO6	List the major categories of drugs, poisons, and controlled substances commonly associated with crime scenes and criminal acts.
CLO7	Describe the way in which toxicology and pathology impact the investigation of crime scene evidence.
CLO8	Describe the role of serology and DNA typing in modern criminal investigations.
CLO9	Explain the basic principles associated with firearms, ballistics, explosives and arson investigations.
CLO10	Use scientific method in all crime lab experiments.

11. Topical Outline

(include as many themes/skills as needed)

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
TO1	Intro to Forensic Science	Reading Class discussion Group project	Quiz on reading Class discussion Lab report Group presentation	CLO1
TO2	Physical Evidence and Physical Properties	Reading Class discussion Lab	Quiz on reading Class discussion Lab report	CLO2, CLO10
TO3	Fingerprinting	Reading Class discussion Lab	Quiz on reading Class discussion Lab report	CLO1, CLO2, CLO10
TO4	Use of the Microscope	Reading Class discussion Lab	Quiz on reading Class discussion Lab report	CLO4, CLO10
TO5	Firearms, Tool Marks, and Other Impressions	Reading Class discussion Group project	Quiz on reading Class discussion Lab report	CLO9, CLO10
TO6	Hairs, Fibers and Paint	Reading Class discussion Lab	Quiz on reading Class discussion Lab report	CLO3, CLO5, CLO10
TO7	Drugs and Toxicology	Reading Class discussion Lab	Quiz on reading Class discussion Lab report	CLO3, CLO6, CLO7, CLO10
TO8	Serology	Reading Class discussion Lab	Quiz on reading Class discussion Lab report	CLO8, CLO10
TO9	DNA as a Forensic Science Tool	Reading Class discussion Group project Lab	Quiz on reading Class discussion Lab report	CLO8, CLO10

12. Methods of Instruction

In the structuring of this course, what major methods of instruction will be utilized?

This course integrates laboratory activities with lecture and other presentations. Students will engage in research based on traditional and Internet resources and in individual and group projects.

13. General Education Goals Addressed by this Course (this section is to fulfill state requirements)

Information

Communication-Written and Oral Yes

Related Course Learning Outcome CLO1, CLO2, CLO7, CLO8, CLO9

Related Outline Component TO1, TO9

Assessment of General Education Goal (Recommended but not limited to)

Observation

Quantitative Knowledge and Skills

Scientific Knowledge and Reasoning Yes

Related Course Learning Outcome CLO3, CLO4, CLO5, CLO6, CLO7, CLO8, CLO9

Related Outline Component TO2, TO4, TO6, TO7, TO8, TO9

Assessment of General Education Goal (Recommended but not limited to)

Quizzes and observation

Technological Competency

Information Literacy

Society and Human Behavior

Humanistic Perspective

Historical Perspective

Global and Cultural Awareness

Ethical Reasoning and Action

Independent/Critical Thinking Yes

Related Course Learning Outcome CLO1, CLO2, CLO4, CLO8

Related Outline Component TO1, TO3, TO5

Assessment of General Education Goal (Recommended but not limited to)

Observation

14. Needs

Instructional Materials (text etc.):

Textbook approved by the Department.

Technology Needs:

Lab equipment to support criminal justice and forensic science needs.

Human Resource Needs (Presently

Employed vs. New
Faculty):

Facility Needs:
Forensic science lab

Library needs:

15. Grade Determinants

The final grade in the course will be the cumulative grade based on the following letter grades or their numerical equivalents for the course assignments and examinations

A: Excellent

B+: Very Good

B: Good

C+: Above Average

C: Average

D: Below Average

F: Failure

I: Incomplete

R: Audit

For more detailed information on the Ocean County College grading system, please see Policy #5154.

16. Board Approval

History of Board
approval dates
Revised: March 21, 1975; February 16, 2008
Board of Trustees Approval Date: August 25, 2008
Board of Trustees Approval Date: March 26, 2012
Board of Trustees Approval Date: November 3, 2016

Reviewer
Comments

EXHIBIT B - 7

Key: 2001