FLORIDA ATLANTIC UNIVERISTY

New Combined Degree Program Request

UUPC Approval 12-6-21

UGPC Approval _____

UFS Approval _____

Banner Posted _____

Catalog _____

New Combined Degree Program Request

BS CS or BA CS or BS CE or BS EE to MS ITM (AIT or CSDA concentrations)

Proposed Program: _____ CIP: _____ Effective Date (Term/Year): Summer 2022 /_____ *(e.g. Fall/2020)*

Proposed Combined Program Information	Undergraduate	Graduate
Degree Level (e.g. B.A., B.S., M.A., M.S., etc.)	BS or BA	MS
Program Name (e.g. Physics, Engineering, etc.)	Computer Science, Computer Eng. Electrical Engineering	Information Technology and Management (Adv. Info. Technology and CS Data Analytics concentrations)
College	Engineering and Comp. Sci.	Engineering and Computer Science
Department	Electrical Eng. and Comp. Sci.	Electrical Eng. and Comp. Sci.
Program Description (provide a brief description of the program, including thesis or non-thesis option)	This is a combined program with BS or BA Computer Science or BS Computer Engineering or BS Electrical Engineering to MS in Information Technology and Management (Advanced Information Technology or CS Data Analytics concentrations). Up to 9 graduate credits can be double-counted in the bachelor and master's degrees. This program does not increase the number of credits in the undergraduate degree.	

Curriculum Requirements

GPA Requirements: Departments must establish a minimum undergraduate GPA for students to be admitted to a combined program. *Note: Please attach explanation.*

The minimum undergraduate GPA is 3.25.

List courses to be shared: Up to twelve (12) credit hours of graduate courses (5000 level or above course work) may be shared between the graduate and undergraduate degree for a combined program. *Note: Please attach explanation:*

- *Academic justification for shared credits and catalog language*
- *List the undergraduate course that will be replaced by graduate courses.*

	Name	Signature	Email	Date
Faculty Submitting Request	Dr. Hanqi Zhuang		zhuang@fau.edu	

Approved by	***Date***
Department Chair:	10/26/2021
College Dean: Digitally signed by Mihaela Cardei DN: cn=Mihaela Cardei, o=Florida Atlantic University, ou, email=mcardei@fau.edu, c=US Date: 2021.11.07 09:10:22 -05'00'	11/07/2021
College Curriculum Chair:	11/08/2021
UUPC Chair:	12-6-21
Undergraduate Studies Dean: Edward Pratt	12-6-21
(Note: Forward approved form to UGPC@fau.edu)	
UGPC Chair:	Jan 4, 2022
UGC Chair:	Jan 4, 2022
Graduate College Dean: Robert W. Stackman Jr. Robert W. Stackman Jr. (Jan 4, 2022 21:03 EST)	Jan 4, 2022
UFS President:	
Provost:	

Email this form and syllabus to mjenning@fau.edu seven business days before the UUPC meeting.

B.S. in Computer Science or B.A in Computer Science or B.S. in Computer Engineering or B.S. in Electrical Engineering to M.S. in Information Technology and Management (Advanced Information Technology or CS Data Analytics concentrations) Degree Program

The department of Electrical Engineering and Computer Science offers a combined B.S. in Computer Science or B.A in Computer Science or B.S. in Computer Engineering or B.S. in Electrical Engineering to M.S. in Information Technology and Management (Advanced Information Technology or CS Data Analytics concentrations) degree program.

Students may count up to 9 credits of approved graduate coursework (5000 level or higher) toward both their bachelor's and master's degrees, see Table1. These graduate courses will replace the technical elective courses in the bachelor's program. The proposed program does not increase the number of credits in the undergraduate degree.

All the combined programs total a minimum of 150 credits:

1. The student has met the minimum 120 credits for the bachelor's degree; and
2. The student has taken a minimum of 30 credits in 5000 level or higher courses for the master's program.

Table 1. Graduate Courses to be counted toward both the bachelor's and master's degree. Alternative courses may be used with prior approval of the graduate advisor.

Software Engineering	CEN 5035	3
Theory and Implementation of Database Systems	COP 6371	3
Introduction to Data Science	CAP 5768	3

This combined program provides an attractive way for students to continue their graduate work. Students complete the undergraduate program first. The combined program can be completed in approximately five years.

Admission Requirements
The GRE requirement is waived for this combined program. To be eligible for the combined program, the bachelor's students should:

1. Have a cumulative FAU GPA of 3.25 or better at the end of their junior year. Note that the cumulative FAU GPA of at least 3.25 must be maintained until the completion of the bachelor's degree.

2. Formally apply to the combined program, completing the admissions process at least one semester prior to the beginning of the M.S. portion of their program.

Students in the combined program must maintain continuous enrollment to remain in good standing.

Degree Requirements
To be eligible for the combined bachelor to master program, students must fulfill the following requirements:

1. Completion of the requirements for the B.S. in Computer Science or B.A in Computer Science or B.S. in Computer Engineering or B.S. in Electrical Engineering program, and other requirements stipulated by the University and College
2. Completion of all requirements for the M.S. in Information Technology and Management (Advanced Information Technology or CS Data Analytics concentrations) program, on either the thesis or non-thesis option.

Sample four-year program of study, B.S. Computer Science

120 credits

Course is Required (R), Elective (E), or Selected Elective (SE)

Year One (35 credits)

Fall Semester (14 cr)
College Writing I (ENC 1101) (3) (R)
Calculus with Analytic Geometry I (MAC 2311) (4) (R)
General Chemistry I with Lab (CHM2045 + CHM2045L) (4) (R)
Introduction to Programming in C (COP 2220) (3) (R)

Spring Semester (14 cr)
College Writing II (ENC 1102) (3) (R)
Calculus with Analytic Geometry II (MAC 2312) (4) (R)
Foundations of Computer Science (COP 3014) (3) (R)
General Physics I with Lab (PHY 2048 & L) (4) (R)

Summer Semester (7 cr)
Introduction to Logic Design (CDA 3201C) (4) (R)
Discrete Math (MAD 2104) (3) (R)

Year Two (31 credits)

Fall Semester (13 cr)
Physics for Engineers II (PHY 2044) (3) (R)
General Physics II Lab (PHY 2049L) (1) (R)
Introduction to Microprocessor Systems (CDA 3331C) (3) (R)
US History to 1877 (AMH 2010) (3) (SE)
Engineering Math 1 (MAP 3305) (3) (R)

Spring Semester (12 cr)
Data Structures and Algorithms Analysis (COP 3530) (3) (R)
Intro to Internet Computing (COP 3813) (3) (R)
Stochastic Models for Computer Science (STA 4821) (3) (R)
Art Appreciation (ARH 2000) (3) (SE)

Summer Semester (6 cr)
Macroeconomic Principles (ECO 2013) (3) (SE)
Computer Operating Systems (COP 4610) (3) (R)

Year Three (30 credits)

Fall Semester (12 cr)
Intro to Embedded Systems (CDA 4630) (3) (E)
Principles of Software Engineering (CEN 4010) (3) (R)
Intro to Database Structures (COP 3540) (3) (R)
Intro to Music Education (MUE 2040) (3) (SE)

Spring Semester (12 cr)
Design &Analysis of Algorithms (COT 4400) (3) (R)

Intro to Artificial Intelligence (CAP 4630) (3) (E)
Structured Computer Arch (CDA 4102) (3) (E)
World Geography (GEA 2000) (3) (SE)

Summer Semester (6 cr)
Formal Languages & Automata Theory (COT 4420) (3) (R)
Intro Cptr Sys Perf Eval (CEN 4400) (E)

Year Four (24 credits)

Fall Semester (12 cr)
Engineering Design I (EGN 4950C) (3) (R)
Software Engineering (CEN 5035) (3) (E)
Introduction to Data Science (CAP 5768) (3) (E)
Interpretation of Fiction (LIT 2010) (3) (SE)

Spring Semester (12 cr)
Engineering Design II (EGN 4952C) (3) (R)
Theory and Implementation of Database Systems (COP 6371) (3) (E)
Introduction to Anthropology (ANT 2000) (3) (E)
Environment and Society (EVR 2017) (3) (E)

Sample four-year program of study, B.A. Computer Science

120 credits

First two years general education with an AA degree level (60 credits)

Year Three (33 credits)

Fall Semester (12 cr)

Computer Programming and Data Literacy for Everyone (COP 1034C) (3)
Introduction to Programming in Python (COP 2034) (3)
Foundations of Computing (COT 2000) (3)
Free elective (3)

Spring Semester (15 cr)

Data Structures and Algorithm Analysis with Python (3)
Structured Computer Architecture (CDA 4102) (3)
Introduction to Database Structures (COP 3540) (3)
Free elective (6)

Summer Semester (6 cr)

Computer Operating Systems (COP 4610) (3)
Introduction to Internet Computing (COP 3810) (3)

Year Four (27 credits)

Fall Semester (15 cr)

Python Programming (COP 4045) (3)
Object-Oriented Design and Programming (COP 4331) (3)
Principles of Software Engineering (CEN 4010) (3)
Applied Database Systems (COP 4730) (3)
CS Elective – Software Engineering (CEN 5035) (3)

Spring Semester (12 cr)

Software Engineering Project (CEN 4910) (3)
CS Elective (3)
CS Elective - Theory and Implementation of Database Systems (COP 6371) (3)
CS Elective – Introduction to Data Science (CAP 5768) (3)

Sample four-year program of study, B.S. Computer Engineering

124 credits

Course is Required (R), Elective (E), or Selected Elective (SE)

Year One (28 credits)

Fall Semester (14 cr)
College Writing I (ENC 1101) (3) (R)
Calculus with Analytic Geometry I (MAC 2311) (4) (R)
General Chemistry I with Lab (CHM2045 + CHM2045L) (4) (R)
Fundamentals of Engineering (EGN 1002) (3) (R)

Spring Semester (14 cr)
College Writing II (ENC 1102) (3) (R)
Calculus with Analytic Geometry II (MAC 2312) (4) (R)
Introduction to Programming in C (COP 2220) (3) (R)
General Physics I with Lab (PHY 2048 & L) (4) (R)

Year Two (36 credits)

Fall Semester (15 cr)
Physics for Engineers II (PHY 2044) (3) (R)
General Physics II Lab (PHY 2049L) (1) (R)
Calculus with Analytic Geometry III (MAC 2313) (R) (4)
Introduction to Logic Design (CDA 3201C) (R) (4)
US History to 1877 (AMH 2010) (3) (SE)

Spring Semester (12 cr)
Introduction to Microprocessor Systems (CDA 3331C) (3) (R)
Foundations of Computer Science (COP 3014) (3) (R)
Engineering Math 1 (MAP 3305) (3) (R)
Art Appreciation (ARH 2000) (3) (SE)

Summer Semester (9 cr)
Discrete Math (MAD 2104) (3) (R)
Circuits I (EEL 3111) (3) (R)
Macroeconomic Principles (ECO 2013) (3) (SE)

Year Three (30 credits)

Fall Semester (16 cr)
Data Structures and Algorithms Analysis (COP 3530) (3) (R)
Intro to Embedded Systems (CDA 4630) (3) (SE)
Electronics I (EEL3300) (4) (R)
Stochastic Models for Computer Science (STA 4821) (3) (R)
Intro to Music Education (MUE 2040) (3) (SE)

Spring Semester (14 cr)
Principles of Software Engineering (CEN 4010) (3) (R)
Structured Computer Arch (CDA 4102) (3) (SE)

Computer Operating Systems (COP 4610) (3) (R)
Electronics Lab I (EEL 3318L) (2) (R)
World Geography (GEA 2000) (3) (SE)

Year Four (30 credits)

Fall Semester (15 cr)
Engineering Design I (EGN 4950C) (3) (R)
Software Engineering (CEN 5035) (3) (E)
Introduction to Data Science (CAP 5768) (3) (E)
Intro to Database Structures (COP 3540) (3) (E)
Intro Cptr Sys Perf Eval (CEN 4400) (3) (SE)

Spring Semester (15 cr)
Engineering Design II (EGN 4952C) (3) (R)
Intro to VLSI (CDA 4210) (3) (SE)
Theory and Implementation of Database Systems (COP 6371) (3) (E)
Python Programming (COP 4045) (3) (E)
Interpretation of Fiction (LIT 2010) (3) (SE)

Sample four-year program of study, B.S. Electrical Engineering

125 credits

Course is Required (R), Elective (E), or Selected Elective (SE)

Year One (32 credits)

Fall Semester (15 cr)
College Writing I (ENC 1101) (3) (R)
Calculus with Analytic Geometry I (MAC 2311) (4) (R)
General Physics I for Engineers with Lab (PHY 2048/L) (4) (R)
General Chemistry 1 with Lab (CHM 2045/L)(4) (R)

Spring Semester (17 cr)
College Writing II (ENC 1102) (3) (R)
Calculus with Analytic Geometry II (MAC 2312) (4) (R)
Art Appreciation (ARH 2000) (3) (E)
General Physics II with Lab (PHY 2049/L) (4) (R)
Fundamentals of Engineering (EGN 1002) (3) (R)

Year Two (32 credits)

Fall Semester (16 cr)
US History to 1877 (AMH 2010) (3) (E)
Calculus with Analytic Geometry III (MAC 2313) (4) (R)
Macroeconomic Principles (ECO 2013) (3) (E)
Intro to Programming in C (COP 2220) (3) (R)
Intro to Music Education (MUE 2040) (3) (E)

Spring Semester (16 cr)
World Geography (GEA 2000) (3) (E)
Interpretation of Fiction (LIT 2010) (3) (E)
Engineering Mathematics 1 (MAP 3305) (3) (R)
Circuits I (EEL 3111) (3) (R)
Intro to Logic Design (CDA 3201C) (4)(R)

Year Three (34 credits)

Fall Semester (17 cr)
Intro to Microprocessors (CDA 3331) (3) (R)
Analysis of Linear Systems (EEL 4656) (3) (R)
Electronics I (EEE 3300) (4) (R)
Stochastic Models for Computer Science (STA 4821) (3) (R)
Electromagnetic Fields and Waves (EEL 3470) (4) (R)

Spring Semester (17 cr)
Electronics II (EEE 4361) (3) (R)
Communication Systems (EEL 4512) (3) (R)
Control Systems 1 (EEL 4652) (3) (R)
Intro to Digital Signal Processing (EEE 4510) (3) (R)
Discrete Math (MAD 2104) (3) (E)
Electronics Lab I (EEL 3318L) (2) (R)

Year Four (27 credits)

Fall Semester (14 cr)

Engineering Design I (EGN 4410C) (3) (R)
Electronics Lab II (EEL 4119L) (EGN 4410C) (3) (R)
Software Engineering (CEN 5035) (3) (E)
Introduction to Data Science (CAP 5768) (3) (E)
Communication Systems Lab (EEL 4512L) (1) (R)
Control Systems Lab (EEL 4652L) (1) (R)

Spring Semester (13 cr)

Engineering Design II (EGN 4411C) (3) (R)
Electric Power Systems (EEL 4216) (3) (R)
Intro to VLSI (CDA 4210) (3) (E)
Theory and Implementation of Database Systems (COP 6371) (3) (E)
Directed Independent Study (EEL 4905) (1)(E)

From: Tamara Dinev <tdinev@fau.edu>
Sent: Tuesday, November 16, 2021 1:32 PM
To: Mihaela Cardei <mcardei@fau.edu>
Cc: Hanqi Zhuang <zhuang@fau.edu>
Subject: RE: Combined BS/MS programs

Dear Dr. Cardei, Dr. Zhuang:

The ITOM department has no objections to your proposed programs

Best Regards:
Tamara
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Tamara Dinev, Ph.D., Department Chair and Professor
Dean's Distinguished Research Fellow
Department of Information Technology and Operations Management, FL 219
College of Business, Florida Atlantic University
Boca Raton, Florida 33431
tel. (561) 297-3181, email: tdinev@fau.edu
Google Scholar: https://scholar.google.com/citations?user=YH8QZ-YAAAAJ&hl=en

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From: Mihaela Cardei <mcardei@fau.edu>
Sent: Tuesday, November 16, 2021 11:59 AM
To: Tamara Dinev <tdinev@fau.edu>
Cc: Hanqi Zhuang <zhuang@fau.edu>
Subject: Combined BS/MS programs

Hello Dr. Dinev,

EECS dept. is proposing several combined BS/MS programs, all of them for the tracks in the EECS dept. They include our joint programs in ITM and Data Science. Please see the two items attached.

Please let me know if you have any objections to the proposed programs.

thanks,
Mihaela Cardei