FLORIDA ATLANTIC UNIVERSITY

Proposal for For-Credit Self-Supporting Program

This form must be completed and submitted to Continuing Education/Office of the Provost. New degrees, or an existing degree with a different curriculum tied to Self-Supporting delivery, must be approved through the normal faculty governance process.

College or Academic Unit: College of Engineering and Computer Science

Department/School of Academic Unit: Computer & Electrical Engineering & Computer Science

Name of Degree: Bachelor of Science in Computer Science with Major in Computer Science

Specialized track (if applicable): Professional

CIP Code: 11.0101

Proposed Implementation Date: Fall 2020

1. Describe the operation and delivery format of the program. Include information of the uniqueness of the program, the target audience, and enrollment projections. Please provide information on data for enrollment projection.

The Department of Computer and Electrical Engineering and Computer Science (CEECS) in the College of Engineering and Computer Science (COECS) at FAU is proposing a Professional Bachelor of Science in Computer Science track. This track is designed for students who already have a bachelors in another discipline. The course offering format includes evenings, weekends, and online material. The Professional BSCS in Computer Science requires 45 credits of Computer Science courses and any necessary math and science courses. The curriculum structure is the same as the second bachelors in computer science. Each course duration is typically 8 weeks and students are expected to take two courses simultaneously. The expected completion time is 2 years. Students will participate in the track in cohort. Students will start the track at the beginning of Fall. The targeted audience includes, but is not limited to, working professionals in South Florida. They will be able to advance their career with an accelerated bachelors track and obtain a second bachelors in computer science while continuing their professional career. This two-year track should enroll approximately 20 students per year with an ongoing enrollment of 30 students in year three and thereafter.

Implementation Timeframe   Projected Enrollment

Year	Head Count	Credit Hours	FTE*
Year 1	20	600	20
Year 2	45	1050	35
Year 3	55	1275	42.5
Year 4	60	1350	45
Year 5	60	1350	45

*FTE calculation is based on the standard national definition, which divides undergraduate credit hours by 30.

2. State the tuition for the program and explain the process used to determine the proposed self-supporting tuition rate. Include information on similar programs being offered elsewhere and their self-supporting tuition rates. Attach market analysis for proposed program, include assessment of need and projected workforce demand.

The tuition for the proposed Professional BS in Computer Science is the same for in-state and out-of-state students. This cost is based on competitive offerings across peer institutions and current SUS and FAU policies. The proposed cost per credit hour is $575; thus students will complete 45 credit hours for a total tuition of $25,875.

Current tuition for comparable programs, include:

University	Program	Tuition
Florida Atlantic University	Part-Time BSN Track for Working Professionals (60 credits)	$43,190
Boston University	Accelerated CS Computer Science (64 credits)	$31,080

3. Provide a listing of the curriculum for the present E&G program and the curriculum for the proposed self-supporting program. Is the curriculum for both programs the same?

Current Program:

General Education	
Foundations of Written Communication	6
Foundations of Society and Human Behavior	6
Foundations of Global Citizenship	6
Foundations of Humanities	6
Subtotal	**24**

Mathematics		
Calculus with Analytic Geometry 1 (3)	MAC 2311	4
Calculus with Analytic Geometry 2 (3)	MAC 2312	4
Discrete Mathematics (3)	MAD 2104	3
Additional Math Elective		3
Subtotal		**14**

Science		
General Chemistry 1 and Lab	CHM 2045 &L	4
Biological Principles	BSC 1010 & L	4
General Physics for Engineers 1	PHY 2048	3
General Physics Lab 1	PHY 2048L	1
Physics for Engineers 2	PHY 2044	3
General Physics Lab 2	PHY 2049L	1
Physical Geology & Lab	GLY 2010C	4
Subtotal		**7 or 8**

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Computer Science Core		
Introduction to Programming in C	COP 2220	3
Foundations of Computer Science	COP 3014	3
Introduction to Logic Design	CDA 3201C	4
Data Structures and Algorithm Analysis	COP 3530	3
Introduction to Internet Computing	COP 3813	3
Computer Operating Systems	COP 4610	3
Stochastic Models for Computer Science	STA 4821	3
Introduction to Database Structures	COP 3540	3
Introduction to Microprocessor Systems	CDA 3331C	3
Formal Languages and Automata Theory	COT 4420	3
Design and Analysis of Algorithms	COT 4400	3
Principles of Software Engineering	CEN 4010	3
Engineering Design 1	EGN 4950C	3
Engineering Design 2	EGN 4952C	3
Subtotal		**43**
Computer Science Electives (4)		21
Free Electives (4)		10 or 11
Total		**120**

Proposed Program:

Mathematics (15 credits)			
Discrete Mathematics (required)	MAD 2104		3 credits
12 credits from following courses or equivalent			
Calculus with Analytic Geometry 1	MAC 2311	4	
Calculus with Analytic Geometry 2	MAC 2312	4	
Introductory Statistics	STA 2023	3	
Methods of Calculus	MAC 2233	3	
Expt Design and Statistical Inference	PSY 3234	3	
Stochastic Models for Computer Sci	STA 4821	3	
Probability and Stats for Engineers	STA 4032	3	
Probability and Statistics 1	STA 4442	3	12 credits
Engineering Mathematics 1	MAP 3305	3	
Numerical Methods	MAD 3400	3	
Differential Equations 1	MAP 2302	3	
Engineering Math 1	MAP 3305	3	
Introduction to Queueing Theory	MAP 4260	3	
Matrix Theory	MAS 2103	3	
Modern Algebra	MAS 4301	3	

Subtotal		**15**

Science (6 credits)***		
General Chemistry 1 and Lab	CHM 2045 &L	4
Biological Principles	BSC 1010 & L	4
General Physics for Engineers 1	PHY 2048	3
General Physics Lab 1	PHY 2048L	1
Physics for Engineers 2	PHY 2044	3
General Physics Lab 2	PHY 2049L	1
Physical Geology & Lab	GLY 2010C	4
Subtotal		**6**

Computer Science Core (36 credits)		
Introduction to Programming in C	COP 2220	3
Foundations of Computer Science	COP 3014	3
Data Structures and Algorithm Analysis	COP 3530	3
Introduction to Internet Computing	COP 3813	3
Computer Operating Systems	COP 4610	3
Introduction to Database Structures	COP 3540	3
Structured Computer Architecture	CDA 4102	3
Formal Languages and Automata Theory	COT 4420	3
Design and Analysis of Algorithms	COT 4400	3
Principles of Software Engineering	CEN 4010	3
Engineering Design 1	EGN 4950C	3
Engineering Design 2	EGN 4952C	3
Computer Science Electives		6
Subtotal		**42**

Curricula the for the current and the proposed programs are very similar. Both programs meet the curriculum criteria for ABET accreditation. In the proposed program, students are expected to have completed Math and Science requirement as a part of their first bachelors. Students will make up any deficiencies in their Math and Science course work will complete necessary coursework. Students in the proposed program take CDA 4102 to meet computer architecture requirements while students in the current program take CDA 3201 and CDA 3331. Students in the proposed program take fewer elective courses.

4. Discuss the impact of the program on existing FAU programs.
　　a. Explain how the unit will ensure that sufficient courses, paid through auxiliary funds are available to meet student demand and facilitate completion of each program submitted for consideration. (Provide flight plan, if available)
　　b. Will any similar E&G courses be eliminated or scaled back if this program is implemented.

The Professional BS in Computer Science track will be managed in a cohort format, which will ensure that sufficient courses are available to meet student demand and facilitate completion of the track in a timely manner. The current BS in Computer Science program is non-cohort and it will not be impacted by the Professional BS in Computer Science. The two programs will run side-by-side.

Flight plan:

Course Name	Number	Credits	Y1Fall	Y1Spr	Y1Sum	Y2Fall	Y2Spr
Introduction to Programming in C	COP 2220	3	x				
Foundations of Computer Science	COP 3014	3	x				
Applications of Discrete Structures	COT 3100	3	x				
Data Structures and Algorithm Analysis	COP 3530	3	x				
Introduction to Internet Computing	COP 3813	3		x			
Computer Operating Systems	COP 4610	3		x			
Introduction to Database Structures	COP 3540	3		x			
Structured Computer Architecture	CDA 4102	3		x			
Formal Languages and Automata Theory	COT 4420	3			x		
Design and Analysis of Algorithms	COT 4400	3			x		
Principles of Software Engineering	CEN 4010	3				x	
Engineering Design 1	EGN 4950C	3				x	
Engineering Design 2	EGN 4952C	3					x
CS Elective		3				x	
CS Elective		3					x

5. Will this program increase the state's fiscal liability or obligation? Will the self-supporting program cohort supplant or diminishing productivity of an existing E&G funded degree program in the same discipline?

This self-supporting program will not increase the state's fiscal liability or obligation. The Self-supporting program track cohort will not supplant or diminish the productivity an existing E&G funded degree program in the same discipline.

6. How will offering the proposed Self-Supporting program aligns with the mission of FAU (Race to Excellence 2015-2025). Outline how this program assists the University in achieving its performance metrics. Include information on assessment of need and projected workforce demand.

The Professional BS in Computer Science track aligns well with the Mission Statement of Florida Atlantic University as "a multi-campus public research university that pursues excellence in its missions of research, scholarship, creative activity, teaching, and active engagement with its communities" as we pursue excellence in teaching and engagement with the technology community. The proposed track is aligned with the strategic plan of the University to grow research activities and education in engineering and computer science. The Professional BS in Computer Science contributes to the strategic goal of enriching the educational experience by strengthening and expanding STEM undergraduate programs at FAU, as well as meeting professional and workforce needs. The program track will be directly

contributing to the increase of the number of BS degrees awarded in areas of strategic emphasis (STEM).

7. Identify any prerequisites or restrictions for acceptance into this program.

A Bachelor's degree or graduate degree in another discipline and must satisfy all admission requirements of the first bachelor's degree in Computer Science at FAU.

8. How will the unit monitor the quality and success of the self-supporting program? Provide specific metrics, evaluation methods, and frequency of evaluation.

The Professional BS in Computer Science will use a cohort structure, which will promote timely graduation. In the cohort structure, the same group of students is expected to take the same sequence of courses in the track.

- Time to complete the track. The cohort structure reinforces timely graduation rates. In the cohort arrangement the same group of students takes the same courses throughout the duration of their time in the program. This arrangement is different from an alternative flexible structure, in which students self-select the course(s) they take in any given semester. In the proposed Professional BS in Computer Science, students are expected to complete the track in 2 years.
- Number of students enrolled. The number of students enrolled in each semester will vary. Students typically start the track at the beginning of Fall semester. Enrollment is a function of economic conditions in the state, as well as a prospective student's self-assessment of their time and availability to commit to a program. An appropriate range of students in each semester is important to sustain a high level of student interaction and ensure sufficient contributions from each student.
- Student satisfaction. An overall satisfaction score will be reported for each course and the program track. The score will be a composite of items intended to measure student assessment of the program content, pedagogical effectiveness of the professor, and administrative services provided to the student.

3/20/2020

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Department Chair/School Director   **Date**

_3-27-20_

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College Curriculum Committee   **Date**

Fred Bloetscher (via email confirmation)   *3-27-20*

Dean   **Date**

Julie Golden-Botti (via email confirmation)   *3-27-20*

Executive Director, Center for Online   **Date**
and Continuing Education

Jerry Haky (via email confirmation)   *3-30-20*

University Curriculum Committee   **Date**

Senior Associate Provost   **Date**

University Faculty Senate   **Date**

Chief Financial Officer (CFO)   **Date**

Provost or Designee   **Date**