NEW/CHANGE PROGRAM REQUEST
Graduate Programs

FLORIDA ATLANTIC UNIVERSITY

Department Electrical Engineering and Computer Science

College Engineering and Computer Science

Program Name	New Program* ☐	Effective Date *(TERM & YEAR)*
MS Artificial Intelligence	✔ Change Program*	Summer 2022

Please explain the requested change(s) and offer rationale below or on an attachment.

This proposal contains the following revisions: the prerequisites are written as a text rather than a table, and the core/electives are restructured.

*All new programs and changes to existing programs must be accompanied by a catalog entry showing the new or proposed changes.

Faculty Contact/Email/Phone

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Consult and list departments that may be affected by the change(s) and attach documentation

Approved by		*Date*
Department Chair		1/26/2022
College Curriculum Chair		01-26-2022
College Dean	M Cardei _(Digitally signed by Mihaela Cardei, DN: cn=Mihaela Cardei, o=Florida Atlantic University, ou, email=mcardei@fau.edu, c=US, Date: 2022.01.26 13:21:36 -05'00')_	1/26/22
UGPC Chair	Paul R. Palmer	Mar 3, 2022
UGC Chair	Paul R. Palmer	Mar 3, 2022
Graduate College Dean	Robert W Stuart	Mar 3, 2022
UFS President		
Provost		

Email this form and attachments to UGPC@fau.edu 10 days before the UGPC meeting.

Master of Science with Major in Artificial Intelligence

The Master of Science (M.S.) with Major in Artificial Intelligence provides a comprehensive curriculum, consisting of foundation and theory of artificial intelligence and elements of computer vision, data analytics and algorithms, knowledge management and reasoning, machine learning and applications. Both thesis and non-thesis options of the M.S. in Artificial Intelligence require a minimum of 30 credits. The thesis option consists of a minimum of 24 coursework credits and 6 thesis credits.

With approval of the advisor, substitution can sometimes be made among similar courses. See the Department of Electrical and Computer Science website for updates.

Admission Requirements
Applicants for admission to the master's program are approved by the University upon the recommendation of the department. All applicants must submit with their applications the official transcripts from previous institutions attended and have official GRE scores forwarded to the Graduate College. Applications for admission are evaluated on an individual basis. At a minimum, applicants are expected to meet the following requirements.

1. Have obtained a bachelor's degree from an accredited institution. and possess a minimal background consisting of the following prerequisite courses or their equivalent. Students are expected to have taken Calculus 1 or Methods of Calculus and a statistics course, to be proficient in programming, and to be knowledgeable in data structures and algorithm analysis. Students can gain this knowledge through undergraduate classes or learn it through work experience. The admissions committee will evaluate the application holistically to determine applicant suitability using several factors such as academic performance, GPA, GRE scores, background, and experience. The admission committee may assign remedial courses on a case-by-case basis. In some cases, prerequisite courses may be taken after admission to the graduate program.

Introduction to Programming in Python	COP 2034 or
Programming 1	COP 2220
Data Structures and Algorithm Analysis with Python	COP 3410 or
Data Structures and Algorithm Analysis	COP 3530
Calculus with Analytic Geometry 1	MAC 2311 or
Methods of Calculus	MAC 2233
Stochastic Models for Computer Science	STA 4821 or
Introductory Statistics	STA 2023 or
Stochastic Processes and Random Signals (Additional course effective fall 2021.)	EEE 4541

2. At least a 3.0 (of a 4.0 maximum) GPA in the last 60 credits attempted prior to graduation;

3. Submission of the Graduate Record Examination (GRE) scores. GRE scores more than five years old are not acceptable. The GRE requirement is waived for any student who has a baccalaureate degree from FAU's Department of Electrical Engineering and Computer Science with a GPA of at least 3.25 (out of a possible 4.0) in the last 60 credits attempted prior to graduation; and

4. International students from non-English-speaking countries must be proficient in written and spoken English as evidenced by a score of at least 500 (paper-based test) or 213 (computer-based test) or 79 (Internet-based test) on the Test of English as a Foreign Language (TOEFL) or a score of at least 6.0 on the International English Language Testing System (IELTS).

Submission of Plan of Study
Students are required to submit a Plan of Study when they have completed between 9 and 15 credits of coursework

with a minimum cumulative GPA of 3.0. All courses must be approved by the student's advisor. A student may not register for thesis credits prior to submitting a Plan of Study.

Degree Requirements
The M.S. in Artificial Intelligence program offers both thesis and non-thesis options. Both options require a minimum of 30 credits, as specified in the table.

Students must satisfy all of the University graduate requirements. In addition, the following requirements must be met. The coursework credits must satisfy the following constraints:

1. No more than 3 credits of directed independent study may be taken.

2. No course can be counted toward the degree that is more than 10 years old at the time the degree is awarded.

3. At least one-half of the credits must be at the 6000 level or above.

4. The student must have a GPA of 3.0 (out of 4.0) or better.

5. All courses in the degree program must be completed with a grade of "C" or better.

Transfer Credits
Any transfer credits toward the requirements for an M.S. in Artificial Intelligence must be approved by the department, the College and the University. The transfer credits must correspond to equivalent requirements and performance levels expected for the degree. Normally no more than 6 credits of coursework (that have not been applied to a degree) can be transferred from another institution.

Professional Master of Science with Major in Artificial Intelligence
The Professional Master of Science with major in Artificial Intelligence is a new self-supporting program designed for working professional students and is offered in online and face-to-face formats. The program requires 30 credits, contains only the non-thesis option and follows the curriculum noted above. Students take ten courses: three core courses and seven elective courses. At least half of the 30 credits must be at the 6000 level or above. Required and elective courses are listed below.

Core Courses (6 9 credits) *Students in both thesis and non-thesis options complete the Core Courses. Select two courses from the following three courses:*		
Computational Foundations of Artificial Intelligence	CAP 5625	
Artificial Intelligence	CAP 6635	
Data Mining and Machine Learning	CAP 6673	
Thesis Option (30 credits)		
Master's Thesis - Artificial Intelligence *(may be taken over multiple terms)*	CAP 6974	6
In addition to the Core Courses and the Thesis credits, students complete five six elective courses (15 18 credits) with the following constraints: two AI Electives, Minimum of 3 credits of 6000-level courses and maximum of 3 credits of Directed Independent Study, COT 6900 or COT 6905		
Non-Thesis Option (30 credits)		
In addition to the Core Courses, students complete seven eight elective courses (21 24 credits) with the following constraints: four AI Electives, Minimum of 9 credits of 6000-level courses and maximum of 3 credits of Directed Independent Study, COT 6900 or COT 6905		

AI Electives (Select 12 credits for Non-Thesis and 6 credits for Thesis option~~maximum of 15 credits in Thesis option and 21 credits in Non-Thesis option~~)	
Computer Vision	
Foundations of Vision	CAP 6411
Computer Vision	CAP 6415
Machine Learning for Computer Vision	CAP 6618
Visual Information Retrieval	COP 6728
Data Analytics and Algorithms	
Computational Foundations of Artificial Intelligence	CAP 5625
Introduction to Data Science	CAP 5768
Social Networks and Big Data Analytics	CAP 6315
Data Mining for Bioinformatics	CAP 6546
Artificial Intelligence	CAP 6635
Big Data Analytics and Hadoop	CAP 6780
Computer Performance Modeling	CEN 6405
Analysis of Algorithms	COT 6405
Knowledge Management and Reasoning	
Natural Language Processing	CAP 6640
Information Retrieval	CAP 6776
Web Mining	CAP 6777
Semantic Web Programming	COP 5859
Machine Learning	
Introduction to Neural Networks	CAP 5615
Evolutionary Computing	CAP 6512
Sparse Learning	CAP 6617
Deep Learning	CAP 6619
Reinforcement Learning	CAP 6629
Data Mining and Machine Learning	CAP 6673
Advanced Data Mining and Machine Learning	CAP 6778
Applications	
Artificial Intelligence in Medicine and Healthcare	CAP 6683
Computational Advertising and Real-Time Data Analytics	CAP 6807
Robotic Applications	EEL 5661
~~Additional Elective Allowance~~ ~~Students may substitute three elective courses with any relevant graduate courses with prior approval from the advisor.~~ ***Other Electives***: select four courses from the graduate courses offered by the EECS department. Course substitution is allowed with the prior approval of the advisor.	