	NEW/CHANGE PROGRAM REQUEST Graduate Programs	UGPC Approval _____ UFS Approval _____ Banner _____ Catalog _____
FLORIDA ATLANTIC UNIVERSITY	**Department** Computer and Electrical Eng and Computer Science **College** Engineering and Computer Science	

Program Name Artificial Intelligence Graduate Certificate	☐ **New Program*** ✓ **Change Program***	**Effective Date** *(TERM & YEAR)* Spring 2021

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

This proposal structures the certificate into two tracks: the Development track and the Applications track. The Development track is intended for students proficient in programming who will develop new algorithms and mechanisms in AI. The Applications track is open to students who have introductory programming skills and are interested to learn how to use the tools and algorithms of AI. Please see the catalog entry for more details.

*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 Dr. Hanqi Zhuang/Zhuang@fau.edu/561-297-3413	**Consult and list departments that may be affected by the change(s) and attach documentation** NA

Approved by		*Date*
Department Chair	Hanqi Zhuang Digitally signed by Hanqi Zhuang DN: cn=Hanqi Zhuang, o=FAU, ou=CEECS, email=zhuang@fau.edu, c=US Date: 2020.06.11 17:02:36 -04'00'	6/11/2020
College Curriculum Chair	Ramesh Teegavarapu Digitally signed by Ramesh Teegavarapu DN: cn=Ramesh Teegavarapu, o=Florida Atlantic University, ou=Civil, Environmental and Geomatics Engineering, email=rteegava@fau.edu, c=US Date: 2020.06.12 07:25:36 -04'00'	6/12/2020
College Dean	Mihaela Cardei Digitally signed by Mihaela Cardei DN: cn=Mihaela Cardei, o=Florida Atlantic University, ou, email=mcardei@fau.edu, c=US Date: 2020.06.14 15:15:07 -04'00'	6/14/2020
UGPC Chair		
UGC Chair		
Graduate College Dean		
UFS President		
Provost		

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

Artificial Intelligence Graduate Certificate

Over the past years, there has been dramatic progress in the rise of artificial intelligence (AI) and its use in the development of systems that can reason and respond to increasingly complex situations. AI is everywhere and the changes enabled by this technology have just begun. AI is transforming every segment of American industry. It is making agriculture more precise and efficient, revealing new medical technologies and bringing the prospect of autonomous transportation and advanced manufacturing closer to reality. To become competitive, companies and corporations will have to embrace AI to some extent. These technological innovations are made possible by engineers and scientists with knowledge and expertise in the latest advancements in the field of AI. This 12-credit certificate provides graduate students with knowledge and skills in the concepts, technologies and applications of artificial intelligence.

Admissions
This certificate program is open to students with a bachelor's degree in any academic area who are not majoring in Artificial Intelligence. in engineering or science and a GPA of at least 3.0. Students must satisfy the prerequisites for each course in the program. The average GPA of all four courses (one core and three elective courses) counted in the program must be 3.0 or better. All course materials are in English; all international students must demonstrate proficiency in English to enter the program. This certificate requires 4 courses which have not been counted in any other minor or certificate within the College of Engineering and Computer Science.

Curriculum

The certificate has two tracks: Development track and Applications track. The Development track is intended for students proficient in programming who will develop new algorithms and mechanisms in AI. The Applications track is open to students who have introductory programming skills and are interested to learn how to use the tools and algorithms of AI. Students in both tracks are expected to have completed a statistics course.

Development Track (12 credits)
Required Courses (6 credits)
- CAP 6635 Artificial Intelligence
- CAP 6673 Data Mining and Machine Learning

Elective Courses (6 credits)
- Select 2 courses from Table 1

Applications Track (12 credits)
(not opened to graduate students in the CEECS department, except MSITM major)
Required Courses (6 credits)
- CAP 5625 Computational Foundations of Artificial Intelligence
- CAP 6616 Applied Machine Learning

Elective Courses (6 credits)
- Select 2 courses from Table 1

Table 1 Electives
Select two courses from the list below. Additional courses may be used as electives with prior approval of the advisor.

Core course (required)		
Artificial Intelligence	CAP 6635	3
Elective courses (choose three)		
Introduction to Neural Networks	CAP 5615	3

~~Computational Foundations of AI~~	~~CAP 5625~~	~~3~~
Introduction to Data Science	CAP 5768	3
Data Mining for Bioinformatics	CAP 6546	3
Sparse Learning	CAP 6617	3
Machine Learning for Computer Vision	CAP 6618	3
Deep Learning	CAP 6619	3
Natural Language Processing	CAP 6640	
~~Data Mining and Machine Learning~~	~~CAP 6673~~	~~3~~
Reinforcement Learning	CAP 6547	3
Artificial Intelligence in Medicine and Healthcare	CAP 6683	3
Advanced Data Mining and Machine Learning	CAP 6778	3
Computer Performance Modeling	CEN 6405	3
Robotic Applications	EEL 5661	3
Industrial Automation	EIN 5603C	3
Intelligent Underwater Vehicles 1	EOC 6663	3
Design and Analysis for Engineering Data	CGN 5716	3
Intelligent Transportation Systems	TTE 6272	3