FLORIDA ATLANTIC UNIVERSITY

# NEW/CHANGE PROGRAM REQUEST
## Graduate Programs

UGPC Approval _____
UFS Approval _____
Banner _____
Catalog _____

**Department** Computer and Electrical Eng and Computer Science

**College** Engineering and Computer Science

**Program Name**
Minor in Artificial Intelligence

☑ **New Program***

☐ **Change Program***

**Effective Date**
*(TERM & YEAR)*
Spring 2021

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

we are proposing a minor in Artificial Intelligence (AI) opened to all graduate students at Florida Atlantic University who are not majoring in Artificial Intelligence. The minor has four graduate-level courses (12 credits) and it is structured into 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 opened to the students who have introductory programming skills 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 17:03:29 -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 07:26:17 -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 15:14:22 -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.

# Minor in Artificial Intelligence

The minor in Artificial Intelligence (AI) is opened to all graduate students at Florida Atlantic University who are not majoring in Artificial Intelligence. The minor is awarded upon graduation from a graduate program at FAU; it is not awarded independently of these degrees.

Requirements for the minor include completion of four graduate-level courses (12 credits) with an average grade of B or better. This minor requires 4 courses which have not been counted in any other minor or certificate within the College of Engineering and Computer Science.

The minor 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 opened to the students who have introductory programming skills 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.

Students must ensure that they have the necessary prerequisites for the selected courses. Students cannot apply for both Minor in AI and the Certificate in AI.

**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.

| | |
|---|---|
| **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** | |
| Big Data Analytics with Hadoop | CAP 6780 |

| | |
|---|---|
| Social Networks and Big Data Analytics | CAP 6315 |
| Data Mining for Bioinformatics | CAP 6546 |
| Design and Analysis for Engineering Data | CGN 5716 |
| Introduction to Data Science | CAP 5768 |
| Computer Performance Modeling | CEN 6405 |
| **Knowledge Management and Reasoning** | |
| Information Retrieval | CAP 6776 |
| Web Mining | CAP 6777 |
| Natural Language Processing | CAP 6640 |
| Semantic Web Programming | COP5859 |
| **Machine/Deep Learning** | |
| Introduction to Neural Networks | CAP 5615 |
| Evolutionary Computing | CAP 6512 |
| Deep Learning | CAP 6619 |
| Advanced Data Mining and Machine Learning | CAP 6778 |
| Sparse Learning | CAP 6617 |
| Reinforcement Learning | CAP 6547 |
| **Applications** | |
| Robotic Applications | EEL 5661 |
| Computational Advertising and Real-time Data Analytics | CAP 6807 |
| Artificial Intelligence in Medicine and Healthcare | CAP 6683 |
| Intelligent Transportation Systems | TTE 6272 |
| Intelligent Underwater Vehicles 1 | EOC 6663 |
| Industrial Automation | EIN 5603C |