



DEPARTMENT OF
HIGHER EDUCATION &
WORKFORCE DEVELOPMENT

New Program Report

Date Submitted:

09/29/2021

Institution

Maryville University of Saint Louis

Site Information

Implementation Date:

5/1/2022 12:00:00 AM

Added Site(s):

Selected Site(s):

Maryville University of Saint Louis, 650 Maryville University Drive, St. Louis, MO, 63141

CIP Information

CIP Code:

110102

CIP Description:

A program that focuses on the symbolic inference, representation, and simulation by computers and software of human learning and reasoning processes and capabilities, and the computer modeling of human motor control and motion. Includes instruction in computing theory, cybernetics, human factors, natural language processing, and applicable aspects of engineering, technology, and specific end-use applications.

CIP Program Title:

Artificial Intelligence

Institution Program Title:

Artificial Intelligence

Degree Level/Type

Degree Level:

Master Degree

Degree Type:

Master of Science

Options Added:

Advanced Artificial Intelligence

Fundamentals of Artificial Intelligence

Collaborative Program:

N

Mode of Delivery

Current Mode of Delivery

Classroom

Online



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Student Preparation

Special Admissions Procedure or Student Qualifications required:
Standard university admission requirements apply.

Specific Population Characteristics to be served:
n/a

Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:

A terminal degree in a field relevant to computing such as computer science, artificial intelligence, data science, cybersecurity, data analytics, mathematics, or statistics. Candidates with Master's degrees with extensive professional and/or teaching experience will be considered.

Estimate Percentage of Credit Hours that will be assigned to full time faculty:

It is estimated that 30% of the credit hours will be instructed by full-time faculty. This percentage will be revised based on student enrollment and the needs of the university.

Expectations for professional activities, special student contact, teaching/learning innovation:

Faculty are expected to stay current on computer science industry trends and innovations to ensure content is aligned with emerging concepts that will enhance student knowledge and practice within the field. Participate in local/national professional organizations, student advising, and ongoing pedagogy training.

Student Enrollment Projections Year One-Five

Year 1	Full Time: 5	Part Time: 5	
Year 2	Full Time: 10	Part Time: 10	
Year 3	Full Time: 15	Part Time: 15	Number of Graduates: 10
Year 4	Full Time: 20	Part Time: 20	
Year 5	Full Time: 25	Part Time: 25	Number of Graduates: 20

Percentage Statement:
n/a

Program Accreditation

Institutional Plans for Accreditation:

Maryville University is accredited by the Higher Learning Commission and we are submitting this change to them simultaneously with our MDHE application. There are no plans to seek specialized accreditation for this program.

Program Structure

Total Credits:
33

Residency Requirements:
27 credit hours

General Education Total Credits:
0



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Major Requirements Total Credits:

21

Course(s) Added

COURSE NUMBER	CREDITS	COURSE TITLE
MATH 509	3	Mathematics for Machine Learning
COSC 640	3	Fundamentals of Artificial Intelligence
COSC 635	3	Deep Reinforcement Learning
COSC 641	3	Advanced Artificial Intelligence
COSC 523	3	Image Processing
DSCI 598	3	Capstone Project
SWDV 610	3	Data Structures
DSCI 614	3	Text Mining
COSC 645	3	Applications of Artificial Intelligence
DSCI 508	3	Machine Learning
COSC 521	3	Robotics
DSCI 619	3	Deep Learning
COSC 643	3	Ethics of Artificial Intelligence
DSCI 503	3	Python

Free Elective Credits:

12

Internship or other Capstone Experience:

There is a 3 credit hour Capstone Project-- DSCI 598.

Assurances

I certify that the program will not unnecessarily duplicate an existing program of another Missouri institution in accordance with 6 CSR 10-4.010, subsection (9)(C) Submission of Academic Information, Data and New Programs.

I certify that the program will build upon existing programs and faculty expertise.

I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

Contact Information

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Maryville University of St. Louis MS in Artificial Intelligence

Description

Artificial Intelligence is a rapidly growing field with new applications emerging continuously. Technologies such as smart devices, virtual assistants, and autonomous vehicles are becoming ever more present in our lives and transforming our society. Companies of all kinds are eager to leverage artificial intelligence technologies to automate processes, gain business insights, and improve user experiences. It is no wonder that LinkedIn has rated Artificial Intelligence Specialist at the number 1 position in its list of Top 15 emerging Jobs of 2020.

Maryville currently offers master's degrees in several areas of computing and information technology. These include the M.S. in Data Science, M.S. in Software Development, M.S. in Cyber Security, and M.S. in Business Data Analytics degree programs. The M.S. in Artificial Intelligence degree program will complement and build from these existing programs. By offering this degree, Maryville will further establish itself as a leader and innovator in offering degrees in emerging technological fields.

Program Requirements (33 credits)

Students pursuing the MS in Artificial Intelligence must complete seven required courses as well as four courses selected from a list of approved electives.

The list of required courses are as follows:

Course Number	Course Name	Prerequisite	First Offering
MATH 509	Mathematics for Machine Learning	MATH 117 or Equal	2022, Fall A
DSCI 503	Python	None	Already exists
DSCI 508	Machine Learning	DSCI 503	Already exists
DSCI 619	Deep Learning	DSCI 508	Already exists
DSCI 598	Capstone Project	DSCI 508	2021, Fall B
COSC 635	Deep Reinforcement Learning	DSCI 508	2022 (tentative)
COSC 640	Fundamentals of Artificial Intelligence	DSCI 503 (Tentative)	2022 (tentative)

Four program electives must be selected from the list below.

Course Number	Course Name	Prerequisite	First Offering
DSCI 614	Text Mining	DSCI 614	Already exists
COSC 521	Robotics	DSCI 508	2022 (tentative)
COSC 523	Image Processing	DSCI 503	2022 (tentative)
COSC 641	Advanced Artificial Intelligence	COSC 640	2023 (tentative)
COSC 643	Ethics of Artificial Intelligence	COSC 640	2023 (tentative)
COSC 645	Applications of Artificial Intelligence	COSC 640	2023 (tentative)
SWDV 610	Data Structures	DSCI 503 (tentative)	Already exists

Additional Information:

- A student seeking either the M.S. in Artificial Intelligence or the M.S. in Data Science after having previously completed another graduate degree at Maryville University can count 12 credit hours of previously completed courses toward the new master's degree (if they satisfy requirements for that degree).
- Up to 6 credit hours of graduate level transfer courses may be counted toward the M.S. in Artificial Intelligence if those courses satisfy requirements for this degree.
- Regardless of the number of credit hours transferred from another university or completed as part of another graduate degree at Maryville, at least 24 hours of new coursework must be completed to earn the M.S. in Artificial Intelligence.
- If a student has completed more than 12 credit hours of required course while completing a prior graduate degree, they may take additional graduate COSC or DSCI electives to meet the 24-hour requirement. The selection of any such courses must be approved by the Associate Dean of the Mathematical and Computing Sciences or the Director of the Computer Science Program.