This Program Change form will enable you to propose several types of changes to any existing program. You may propose changes to an existing program's:

- Title
- Description
- Requirements
    - Admission Requirements
    - Prerequisites
    - Required courses
    - Elective courses
    - Graduation requirements

It is highly recommended to create a separate Word document that includes the entire sections of the catalog you wish to change. To create the document, copy from Requirements section of this form in order to include live course links.

- In the word document, use the ~~strikethrough~~ option to denote deletions and the <u>underline</u> icon to denote added text.

-Once formatting is complete in your Word document, please paste the text in the corresponding text box.

In addition, this program change form should be used to propose a new major or track (or specialization, concentration, area of emphasis). Each of these types of programs is defined by the Board of Governors (BOG) of the State University System of Florida, in its Regulation 8.011 Academic Degree Program Coordination and Approval. These definitions are outlined in FIU Policy 350.010 Academic Degree Program Coordination and Approval.

- **Program Major**: An organized curriculum offered as part or all of an existing or proposed degree program. A major must be reasonably associated with the degree program under which it is offered and share a minimum of 15% of core courses with other majors within the same degree program. For an undergraduate degree, each major requires completion of a minimum of 30 credits (including core courses). Graduate degrees typically focus only on the specific discipline; therefore, there is no minimum credit requirement for graduate majors. There are cases where the major and degree program names are identical, thus creating only one major.
- **Program Track (or Specialization, Concentration, Area of Emphasis)**: An organized curriculum, offered as part of an individual student's degree program, which enhances or complements the degree to be awarded in a manner that leads to specific educational or occupational goals. In order

to establish some uniformity across degree programs, this level of categorization should be termed a track unless a different terminology is required for accreditation or discipline purposes. The number of credit hours of a track, specialization, concentration, or area of emphasis shall not equal or exceed the number of credit hours established for a program major at the same degree level.

Standing committees of the FIU Faculty Senate will review these changes. The members that comprise these governing bodies may not understand the nuances of your department or academic discipline. Therefore, you will be required to provide a justification for the changes you are proposing. The committees request that justifications be specific and written for an audience that is unfamiliar with your department and program.

Bulletin

Bulletin number
4

Program & Proposal Type

Which type of program do you propose changing?
Degree Program

Select each type of change you are proposing to an existing program. (You may propose more than one type of change/ addition.)
Program Requirements

Justification

Please provide a justification for the changes you are proposing.
Math/Stats is no longer offering STA2122 or STA3145
In addition, the Academic Progression Standard in Program Requirements is edited to clarify for students how this standard is applied.

Effective term

Proposed program changes will become **effective Fall of the next academic year**. However, some cohort programs may require a phasing in of programmatic changes. Please provide a rationale for any circumstances requiring other than a Fall implementation date.

For example: changes submitted in 2025-26 will become effective in Fall 2026.

Justification for Cohort programs
-

Questions Specific to the List of Courses Required for this Program

If proposing additional courses, do all courses exist in the current catalog?
Not applicable. This proposal does not include the addition of any courses.

If courses are not in the current catalog, are they currently in the workflow process?
No

New Course Form
Please submit a New Course Form for the courses you wish to propose.

Are all courses to be added taught in the same proposing department?
Not applicable. This proposal does not include the addition of any courses.

Are courses to be deleted taught in the same proposing department?
Yes

If no, provide written approval/acknowledgment of the other department(s).
-

Does this change affect the courses measuring Student Learning Outcomes (SLOs) or Program Outcomes (POs) for the program?
No

Please upload your revised Student Learning Outcomes (SLOs) and/or Program Outcomes (POs).
-

Catalog Fields

Current Program Title
Bachelor of Science in Data Science and Artificial Intelligence

Proposed Program Title
-

Instructions:

Changes to the Program Description and Program website may be made directly in the respective boxes below. These changes are visible to review using the "view changes" option on the top right. Once submitted, reviewers can view the changes using the "changes" button on the top section of the proposal.

Program Description
Students who decide to pursue a Bachelor of Science in Data Science and Artificial Intelligence at Florida International University will be given a broad foundation in the fast-evolving fields of data science and AI. This degree program will prepare learners with the skills to analyze and interpret complex data, develop algorithms, and build AI systems that can think and learn. Students will explore key concepts in machine learning, neural networks, statistical modeling, and computational problem-solving. Upon completion, graduates are well-prepared to pursue careers in data science, technology, finance, healthcare, robotics, bioinformatics, and many other industries, or to continue their studies in advanced degree programs. This program not only opens up numerous job opportunities but also provides the analytical foundation necessary to drive innovation and decision-making in a data-driven world.

Proposed Program Description
-

Program Website
Program website

Proposed Program Website Change
-

Requirements

Simple Requisites

Admissions Requirements

Students must follow regular University admission procedures and upon admission declare their specific major as Data Science and Artificial Intelligence.

Program Requirements

Academic Progression Requirements

All required courses must be completed with a grade of "C" or better. All students must participate in Knight Foundation School of Computing and Information Science assessment activities and successfully complete an exit interview prior to graduation.

Lower Division Preparation
Type
Prerequisite

Common Prerequisite Courses

-

Complete ALL of the following Courses:

- MAC2311 - Calculus I
- MAC2312 - Calculus II
- MAS3105 - Linear Algebra
  OR MAC2313 - Multivariable Calc
  OR COT3510 - Applied Linear Structures for Computing
- COP2047 - Python Programming I
- BSC2010 - General Biology I
  AND BSC2010L - General Biology I Lab
- PHY2048 - Physics with Calculus I
  AND PHY2048L - General Physics Laboratory I
- STA2023 - Statistical Methods
  OR STA3111 - Statistics I
  OR STA3163 - Statistical Methods I
  OR STA3033 - Introduction to Probability and Statistics for CS
  OR STA2122 - Introduction to Applied Statistics
  OR STA3145 - Statistics for the Health Professions
  OR STA3193 - Statistics for Biology I
  OR STA4322 - Introduction to Mathematical Statistics II

Students may take any COP2XXX-X999 Computer Programming course at FIU in place of COP2047

Students may take any Natural Science Group 1 or Group 2 course with lab or BSC 2010/L.

Upper-Division Requirements

At least 50% of the upper division credits required for the BA in Data Science and Artificial Intelligence must be taken at FIU.

Upper Division
Type
Completion Requirement

Degree Program Credit Hours: 120

The Bachelor of Science in Data Science and Artificial Intelligence program will comprise 120 credit hours and will offer students the option to pursue one of the concentrations: Computational and Big Data Analytics, Artificial Intelligence and Robotics, and Statistical

Modeling.

Fulfill ALL of the following requirements:

Required Courses: 36 credits

-

Complete ALL of the following Courses:

- CTS1500 - Emerging Topics in Digital Life
- COP3410 - Computational Thinking
- CAP2757 - Introduction to Data Science
- COP3045 - Python Programming II
- CGS3095 - Technology in the Global Arena
- COT3100 - Discrete Structures
  OR MAD2104 - Discrete Mathematics
- ENC3249 - Professional and Technical Writing for Computing
- COP3538 - Data Structures Fundamentals
- CAP3764 - Advanced Data Science
- CIS3950 - Capstone I
- CAI4002 - Artificial Intelligence
- CIS4951 - Capstone II
- CAI4105 - Introduction to Machine Learning

-

-

Elective Courses

Students may broaden their expertise by selecting electives from the up-to-date list of elective courses maintained by the Knight Foundation School of Computing and Information Sciences. For more details and to view the lists of electives (and determine pre-requisites), please visit: KFSCIS's Electives Page for BS in DS & AI.

-

Concentration Courses: 12 credits

Students complete 4 courses within one concentration, or students complete 4 courses from any of the concentrations:

- **Computational and Big Data Analytics**
- **Artificial Intelligence and Robotics**

- **Statistical Modeling**

Earn at least 12 credits

-

Major Requirements

There are no majors associated with this program.

Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering Requirements

Concentration in Computational and Big Data Analytics

Strong emphasis on developing programming and analytical skills, as well as gaining a solid understanding of computer science principles, and encourages students to apply the latest technologies in data storage, manipulation, security, retrieval, mining, machine learning, AI, and cloud computing.

Concentration in Computational and Big Data Analytics: 12 credits
Type
Completion Requirement

Computational and Big Data Analytics Courses

-

Complete at least 4 of the following courses:

- CAI4203 - Introduction to Deep Learning
- CAP4770 - Introduction to Data Mining
- COP4534 - Algorithm Techniques
- COT4431 - Applied Parallel Computing
- CEN4083 - Introduction to Cloud Computing
- COP4703 - Information Storage and Retrieval Concepts

-

Concentration in Artificial Intelligence and Robotics

Developing algorithms and computational techniques to enable machines to learn, reason, and

adapt, empowering them to solve complex problems and enhance decision-making processes.

Concentration in Artificial Intelligence and Robotics: 12 credits
Type
Completion Requirement

Artificial Intelligence and Robotics Courses

-

Complete at least 4 of the following courses:

- CAP4770 - Introduction to Data Mining
- CAI4304 - Natural Language Processing
- CAP4453 - Introduction to Robot Vision
- CDA4625 - Introduction to Mobile Robotics
- CAI4203 - Introduction to Deep Learning
- CAP4506 - Introduction to Game Theory

-

Concentration in Statistical Modeling

Statistically driven decision making with emphasis on mathematical theory that underlies the models and programming.

Concentration in Statistical Modeling: 12 credits
Type
Completion Requirement

Statistical Modeling Courses

-

Complete at least 4 of the following courses:

- CAP4830 - Fundamentals of Modeling & Simulations
- STA3164 - Statistical Methods II
- STA4234 - Introduction to Regression Analysis
- MAD3301 - Graph Theory
- MAD3401 - Numerical Analysis
- CAP4770 - Introduction to Data Mining

**STA3164: Prerequisite course is STA3163.*

Admission Requirements Changes

Instructions
To propose changes to existing catalog text, first select the " + Add New" button below. A text box will appear. Then, copy the existing Admissions Requirements text from the Admissions Requirements section above and paste into a Word document.

In the word document, use the strikethrough option to denote deletions and the underline icon to denote added text. Once formatting is completed, paste the formatted text into the text box below.

If there are any courses referenced as requirements for admissions, once the text is pasted into the box below, any additions should be added using the "Embed Course Link" (book icon) in the toolbar above. Click the icon. Then, search using the prefix and number of the course you wish to add. Then click "Embed Link".

If any course added displays "inactive" next to the number, please contact APA staff for assistance in reactivation. (utilize Course Activation Form)

Changes

-

Program Requirement Changes

Instructions
To propose changes to existing catalog text, first select the " + Add New" button below. A text box will appear. Then, copy the existing Program Requirements text from the Admissions Requirements section above and paste into a Word document.

In the word document, use the strikethrough option to denote deletions and the underline icon to denote added text. Once formatting is completed, paste the formatted text into the text box below.

For additional courses, use the "Embed Course Link" (book icon) in the toolbar above. Click the icon. Then, search using the prefix and number of the course you wish to add. Then click "Embed Link".

If you are trying to add a course that has been deactivated, it must be reactivated before submission of this proposal.

- MAC2311 - Calculus I

- MAC2312 - Calculus II
- MAS3105 - Linear Algebra
  OR MAC2313 - Multivariable Calc
  OR COT3510 - Applied Linear Structures for Computing
- COP2047 - Python Programming I
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  OR STA3033 - Introduction to Probability and Statistics for CS
  ~~**OR** STA2122 - Introduction to Applied Statistics~~
  ~~**OR** STA3145 - Statistics for the Health Professions~~
  OR STA3193 - Statistics for Biology I
  OR STA4322 - Introduction to Mathematical Statistics II

Students may take any COP2XXX-X999 Computer Programming course at FIU in place of COP2047

Students may take any Natural Science Group 1 or Group 2 course with lab or BSC 2010/L.

CEC Academic Progression Standard

~~Students who are unsuccessful in passing common pre-requisites after two attempts will be advised to change their major into an area where they can be successful. Drops after the add/drop period, which result in a DR grade, are considered an attempt in the course and count as an unsuccessful enrollment.~~

Steady academic progression is expected by the College of Engineering and Computing. Students who are unsuccessful in passing common pre-requisites after two attempts will be advised to change their major into an area where they can be successful. Drops after the add/drop period, which result in a DR grade, are considered an attempt in the course and count as an unsuccessful enrollment.

Students must also meet the Math Progression standard of successfully completing Calculus 1 within three academic terms, not counting summers.

Students will be redirected to a different degree program when completion of the progression standards, including the applicable math progression standard by its stated semester, is no longer feasible.

Major Requirements

Instructions
This section allows you to make "changes to a current major" or propose a "new major".

To propose **changes** to the catalog information for an existing major(s):

1. Select "**Change(s) to a current major**" in the drop down below.
2. Use the "+ Add New" button and a text box will appear.
3. Copy the existing Major Requirements text from the Major Requirements section above and paste into a Word document.
4. In the word document, use the strikethrough option to denote deletions and the underline icon to denote added text. Once formatting is completed, paste the formatted text into the text box below.
5. For additional courses, use the "Embed Course Link" (book icon) in the toolbar above. Click the icon. Then, search using the prefix and number of the course you wish to add. Then click "Embed Link".

   If you are trying to add a course that has been deactivated, it must be reactivated before submission of this proposal.
6. Repeat steps 2 - 5 for each major which requires changes.

To propose a **new major(s)** in this degree program:

1. Select "**New major**" in the drop down below.
2. Use the "+ Add New" button.
3. Complete all the required fields.
4. In the Major Requirements field, provide a detailed course listing and any specifics regarding course requirements.
5. For each course, use the "Embed Course Link"(book icon) in the toolbar above. Click the icon. Then, search using the prefix and number of the course you wish to add. Then click "Embed Link".

   If you are trying to add a course that has been deactivated, it must be reactivated before submission of this proposal.
6. Repeat steps 2 - 5 for each additional new major.

Using the drop down menu below, please select the changes you would like to make.

Change(s) to a Current Major

-

New Major(s)

-

Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering Requirement

Instructions
This section allows you to make "Change(s) to a current Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering Requirement" or propose a "New Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering".

To propose **changes** to the catalog information for an existing Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering(s):

1. Select "**Change(s) to a current Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering Requirement**" in the drop down below.
2. Use the "+ Add New" button and a text box will appear.
3. Copy the existing text from the Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering Requirements section above and paste into a Word document.
4. In the word document, use the strikethrough option to denote deletions and the underline icon to denote added text. Once formatting is completed, paste the formatted text into the text box below. .
5. For additional courses, use the "Embed Course Link"(book icon) in the toolbar above. Click the icon. Then, search using the prefix and number of the course you wish to add. Then click "Embed Link".

   If you are trying to add a course that has been deactivated, it must be reactivated before submission of this proposal.
6. Repeat steps 2 - 5 for each offering which requires changes.

To propose a **new Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering (s)** in this degree program:

1. Select "**New Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering**" in the drop down below.
2. Use the "+ Add New" button.
3. Complete all the required fields.
4. In the Requirements field, provide a detailed course listing and any specifics regarding course requirements.
5. For each course, use the "Embed Course Link" (book icon) in the toolbar above. Click the icon. Then, search using the prefix and number of the course you wish to add. Then click "Embed Link".

   If you are trying to add a course that has been deactivated, it must be reactivated before submission of this proposal.
6. Repeat steps 2 - 5 for each additional new offering.

Using the drop down menu below, please choose the changes you would like to make.

-

Change(s) to a current Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering Requirement

-

New Track, Specialization, Concentration, Area of Emphasis, or Other Curricular Offering

-

SACSCOC Substantive Change

If you have any questions or concerns regarding SACSCOC and Substantive Change, please contact the Office of Academic Planning and Accountability.

Will additional facilities be needed to deliver the revised program?
No

If so, describe the additional facilities that will be needed.
-

Will additional equipment be needed to deliver the revised program?
No

If so, describe the additional equipment that will be needed.
-

Will additional financial resources be needed to deliver the revised program?
No

If so, describe the additional financial resources that will be needed.
-

Will additional library/learning resources be needed to deliver the revised program?
No

If so, describe the additional library/learning resources that will be needed.
-

Will new faculty need to be hired to deliver the revised program?
No

If so, describe the additional faculty resources that will be needed.
-

Will new content be required for the revised program?
No

If so, select the percentage of new content for the revised program.
-

Will some or all of the revised program be offered at a new location geographically apart from the Modesto A. Maidique Campus (or its Engineering Center)?
No

If so, select the percentage of the program that will be offered at a new location.
-

Enter the name of the location where the revised program will be offered.
-

Will the revised program be offered via a different method of delivery than is currently used?
No

If so, by which method of delivery will the revised program be delivered?
-

Select the percentage of the program that will be offered via distance education (i.e., online).
-

Will the revised program enter into a collaborative academic arrangement that includes the initiation of a dual academic program with another institution?
No

If so, with which institution will you collaborate in this dual academic program?
-

Will the revised program enter into a contract by which an entity not eligible for Title IV funding offers 25% or more of the program (e.g., international university)?
No

If so, with which entity will you contract?
-

Supporting Documentation

Please include additional relevant documentation.
DS-BS_Flowchart_v4.pdf

Dependencies

FIU Acad Plan

fiuAcadPlan

Unit Cumulative Total
120

SAP Eligibility Percentage
0.5