**Proposal for New Program**

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| **Home Department and Contact Information** | |
| Home Department: Geography | Date: 1 October 2020 |
| Home Department Chair: Dr. Judy Otto | Extension: 4770  Email: jotto@framingham.edu |
| Home Department  Curriculum Committee Chair:  *If not home department chair* | Extension:  Email: |
| Log Originator: Dr. Larry McKenna, Physics and Earth Science  *If not home department chair or home department curriculum committee chair* | Extension: 4741  Email: lmckenna1@framingham.edu |
| **Program Information and Description** | |
| Proposed Program Title and Code: Minor in Data Science (DSCI) | |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Major | **X** | Minor |  | Concentration |   Type of Program | |
| Program Description  *Please provide the language as it should appear in the catalog. In addition to the requirements, a description of the program is advised.*  Data science is the study of data from its collection, storage, and retrieval to its analysis and use in decision making. Data scientists use powerful digital tools to analyze vast data set which may include not just “numbers” but also text, images, and video. Students successfully completing the minor will have the knowledge and expertise to conduct exploratory and confirmatory analyses of these diverse data types, how to choose and apply the proper tools to the data at hand, and how to visualize their results to effectively convey their conclusions to a wide variety of audiences.  MINOR IN DATA SCIENCE (5 COURSES) Required courses: S   1. CSCI 1XX: Introduction to Python 2. GEOG 111: Digital Earth (to be renamed Introduction to Geospatial Technologies) 3. ENVS 202: Data Analysis for Scientists 4. STAT 307 Intermediate Statistics 5. GEOG3xx-Geospatial Applications Using Python OR ENVS 333: Digital Field Methods | |
| Joint Program   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Is this program joint with another department or departments? | |  |  |  |  | | --- | --- | --- | --- | | **X** | Yes |  | No | |  |  | | --- | | If yes, which department(s) is (are) participating? Physics and Earth Science, Mathematics |  |  | | --- | | Which department will oversee the program?\* Geography |   *\* The overseeing department must be listed as an affected department unless that department is submitting the log, and the overseeing department should plan to attend the subcommittee meeting and full UCC meeting at which this program is discussed.* | |
| **Rationale** | |
| *Please provide language that clearly explains the purpose for the new program and, if applicable, how the program differs from any similar programs. Include the date of department curriculum committee approval, if available.*  Statistics evolved in the mid-19th century as a way of understanding the social and economics of countries, or stat[es]. Early textbooks on statistics focused on extracting meaning from small data sets, often no more than a few dozen points, or ways of rapidly and approximately analyzing “large” data sets with perhaps 100 data.  Then, Moore’s Law.  Since 1970, the revolution in cheap computing has changed the nature of how we understand data. Statistics is now in the age of “Big Data,” where vast quantities of data are instantly available and rapidly investigated with unprecedented computing power. Managing and analyzing these enormous and dynamic data sets has birthed a new field, *data science*. Data scientists are not statisticians in the classical sense: they are as adept at the mechanics of finding, storing and manipulating vast data sets as they are using powerful digital tools to analyze data. Even the nature of “data” has expanded: data now include not just “number” but text, images, and even video. An FSU data science major would be of interest to any major where data are used to make decisions. This means business and social science majors, not just STEM students, would find the minor of interest intellectually and professionally. This truly inter-disciplinary minor requires no previous knowledge of statistics or programming.  This minor would complement, not compete with, our existing Statistics minor. As noted above, the STAT minor focusses on traditional, “math-based” analysis. The data science minor, on the other hand, has a firm focus on the management of data, and the exploration of this data, often in ways that aren’t hypothesis driven. Neither is this minor in conflict with a computer science minor. Much of the “nitty gritty” data management of interest to computer science minors is not applicable to data scientists, which is why the latter take Python rather than Java as their introductory course. | |
| **General Education** | |
| *Please see the Guide to UCC Forms for descriptions of the domains and subdomains*  Subdomain Fulfilled by Major or Concentration  *Select one subdomain to be fulfilled by the major or concentration. Enter the number corresponding to the Domain (I, II, or III), the letter corresponding to the Subdomain (A, B, or C)*   |  |  | | --- | --- | |  | Domain I, II, or III | |  | Subdomain A, B, or C, depending on Domain. |   Rationale  *Provide a rationale for the subdomain fulfilled by the new program.* | |
| **Catalog Changes** | |
| *Provide information about catalog changes related to the addition of this program. Include information regarding where the program information should be added to the catalog; provide page number(s) from current catalog, if available, as reference.*  Department *(Select all that apply and include the page number in the department section.)*   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Major |  | Concentration |  | Minor | X | on page: | Geography section |   Other:  University-Wide *(Select all that apply. For interdepartmental programs, include the page number for each section.)*   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Add program to list of *Programs of Study* on page: | | | | | | | | | | INTERDEPARTMENTAL MINORS, page 70 of AY 19-20 catalog | | | | | | | | | | | | |  |  |  | | | | | | | |  |  | | | | | | |  | | Bachelor of Arts |  | Bachelor of Science | | | | | | | |  | Bachelor of Science Education | | | | | | |  | |  | | | | | | | | | | | | | | | | | | | | | | | Add program to *University* list of | | | | | Majors | |  | | Minors | | | | x | | on page: | | 70 | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | Add *interdisciplinary* program | | | | Major | |  | | Concentration | | | | | |  | | Minor | x | on page(s): | | | 70 |   Other: | |
| **Notifications** | |
| Home Department and Dean Acknowledgements  *Anyone submitting a log to the University Curriculum Committee is required to notify the home department’s chair, the chair or designee of the home department’s curriculum committee, and one of the academic deans (home department preferred) for their acknowledgements before the log goes to the All University Committee for distribution to UCC.*  *Home departments and deans have two weeks to acknowledge a log after which time the log without acknowledgement may still go to AUC for distribution to UCC. Note that the home department will be invited to subcommittee and full committee discussions of the log, whether or not they submit the log themselves and whether or not they acknowledge the log.*   |  |  | | --- | --- | | Home Department(s): |  | |  |  | | Date of Notification\*: |  |  |  |  | | --- | --- | |  | Acknowledgement\*\* by Home Department Chair | |  |  | |  | Acknowledgement\*\* by Home Department Curriculum Committee Chair or Designee | |  |  | |  | Acknowledgement\*\* by Academic Dean *(Home Department Dean Preferred)* |   *\*Submitters should submit a copy (PDF preferred) of the email notification message(s) with the log submission to AUC. If home departments are submitting the log (and thus signing this form), no email notification for the home department’s chair or curriculum committee chair or designee is necessary, but email notification to the dean is. There is no need to submit a record of acknowledgement, but submitters are advised to keep records of correspondence regarding these logs.*  *\*\* Only check these boxes if acknowledgement has been received. Home departments submitting logs for their own courses/programs should check these boxes, presuming that the departmental curriculum committee chair and department chair have reviewed the log.* | |
| Affected Departments/Programs  *Persons submitting logs to the University Curriculum Committee are required to notify the chair of another department/program if the log*   * *is similar to an existing course or program;* * *includes subject matter traditionally offered by another department;* * *adds, changes, or removes a prerequisite, co-requisite, or recommended course for a course in another department;* * *adds, changes, or removes a recommended or required course for a major, minor, or concentration of another department* * *affects a program that must meet external certification, licensing, or accreditation.*   *Affected departments must have the opportunity to respond to the log, so UCC review will not occur until affected departments have been notified and either (1) they have acknowledged the log or (2) the two-week post-notification period has passed. The chair of any affected department/program will be notified when the log is scheduled for review by the designated UCC subcommittee and by the full University Curriculum Committee, unless the two-week period has passed without response or unless otherwise indicated in Log Acknowledgements forum on Blackboard.*   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Does this new course affect another department/program? | |  |  |  |  | | --- | --- | --- | --- | | **X** | Yes\* |  | No | |   \*If yes, the chair of each affected department must be notified via the Log Acknowledgements forum on Blackboard.  *Note: A department chair’s acknowledgement of receipt of notification of this log via a Log Acknowledgements forum on Blackboard does not indicate endorsement of the proposal.*  *Indicate the department(s)/program(s) below whose chair must be notified via Blackboard.*   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Accounting, Economics, and Finance |  | Fashion Design and Retailing | X | Mathematics | |  |  |  |  |  |  | |  | Art and Music |  | Food and Nutrition |  | Nursing | |  |  |  |  |  |  | |  | Biology | X | Geography | X | Physics and Earth Science | |  |  |  |  |  |  | |  | Chemistry and Food Science |  | Global Studies |  | Political Science | |  |  |  |  |  |  | |  | Communication Arts |  | History |  | Psychology and Philosophy | |  |  |  |  |  |  | | X | Computer Science |  | Management and Business & IT |  | Sociology | |  |  |  |  |  |  | |  | Education |  | Marketing |  | World Languages | |  |  |  |  |  |  | |  | English |  |  |  |  |      |  |  | | --- | --- | | Date(s) of Notification\*: |  |   *\* Dates of notification will be listed in the Log Acknowledgements section of Blackboard. Subcommittee chairs will transfer those dates here.* | |

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| Larry McKenna |  | C:\Users\lmckenna1\Documents\W-9, Signature, etc\signature.png |
| Typed Name of Person Submitting the Log |  | Signature of Person Submitting the Log |

**For UCC use only**

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| **Primary Reviewing Subcommittee** |  | A |  | B |  | C |  | Notifications Verified | Date: |

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| Log Reviewed/Revised | Date: | Recommendation: |  | Support |  | Oppose |

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| **Subcommittee D General Education Review** | Date: |  | NA |

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| Recommendation (General Education Request ONLY): |  | Support |  | Oppose |

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| **Reviewed/Revised by UCC** | Date: |

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| Recommendation |  | Support |  | Oppose |

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|  | Licensure/Accreditation Issue |

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|  | Contact Registrar (add notes below) |

UCC Notes: