

## UNIVERSITY CURRICULUM COMMITTEE

March 1, 2023. 3:05 – 4:30 p.m. Room: STV 401A

**Members Present:** Susan Chen, Gina Hunter, Thomas Howe, Megan Leonard, Joshua Newport, Aaron Paolucci, Patricia Pence, Yi Ren

**Members Absent:** Mary Elaine Califf, Tonya Pierce, Bert Stabler, Allison Kroesch

### Guests:

Danielle Lindsey, Office of Registrar; Amy Hurd, Office of the Provost; Horace Melton, Marketing; Gail Yamskulna, Mathematics

1. Convene: Joshua Newport convened meeting at approximately 3:06 pm
2. Introductions of members and guests
3. Accepted minutes from last meeting as distributed to members.
4. Action items:

- [Data Science Major \(IDS\)](#) – Newport, Pence, Paolucci, Ren

The IDS Data Science major prepares students with the technical knowledge and computational skills to meet current and future problem solving and analysis of large data sets. The IDS Data Science major is an interdisciplinary major with three core areas of curricula including: 1) mathematics and statistics, 2) information technology and computer science, and 3) an applied sequence for contextual application in an area linked to the future career path of the student. The sequences include 1) Big Data and Computational Intelligence, 2) Business Analytics, 3) Population Health, 4) Social Demographic/Public Policy analytics, and 5) Individualized Plan of Study.

Three core areas of curricula including: 1) mathematics and statistics, 2) information technology and computer science, and 3) an applied sequence for contextual application in an area linked to the future career path of the student.

There is a high demand for graduates in this area and there is a large and growing labor market. It is anticipated that this new major and sequences will attract new students to ISU who otherwise would not attend ISU.

There is a common core of coursework that students in each sequence will complete and then additional courses depending on the sequence. Two new IDS courses, a capstone and a professional practice course, are being developed and students will be required to complete one of these.

Currently, no other IL school has an interdisciplinary program in data science. Allows students to focus on a specialty area within data science. Innovative program – the foundation of math and statistics and the content area sequences. There is the opportunity to add more sequences in other specialty areas in future.

The proposal initiators will seek a General Education Program exemption for the Science, Mathematics and Technology Category so students in this major (and all sequences) will have 36 credit hours required in General Education instead of the regular 39 credit hours.

The Financial Impact Form is still being reviewed by the Provost.

It was noted that there are brief descriptions of the Social Demographic/Public policy Analysis Sequence and the individualized Plan of Study Sequence, and it would be good to have descriptions listed for the other three sequences. Dr. Hurd will work with the departments to get these added.

- [Data Science – Big Data and Computational Intelligence Sequence](#) – Paolucci, Ren

This sequence proposal was initiated by the Mathematics Department.

Big Data and Computational Intelligence is a blend of machine learning, deep learning, applied mathematics, statistics, and computational algorithms for modern data analysis. Students in this sequence will learn to think critically about the process of modeling and analyzing large scale data in scientific and practical contexts. The students will be able to gain deep insights from big data using knowledge from statistical inference, computational processes, predictive modeling, and data management strategies. Computational Intelligence plays a major role in the development of solutions based on massive

data sets to solve complex problems in various areas in industry. Students in the Big Data and Computational Intelligence sequence will gain extensive preparation to help them become successful data scientists who can solve problems from a wide range of areas in science and technology. A minimum major GPA of 2.00 is required for graduation.

Once this new major and sequences are approved the Mathematics Department will submit a proposal to delete the Major in Mathematics, Data Science and Computational Mathematics Sequence.

- [Data Science – Business Analytics Sequence](#) – Newport, Pence

This sequence was initiated by the Marketing Department.

Students in this sequence will gain the knowledge and skills to help businesses use statistical methods and technologies for data analysis to gain new insight and improve strategic decision-making.

Dr. Melton indicated that the minimum required credit hours should be 77 instead of the 76 that is indicated on the proposal.

- [Data Science – Individualized Sequence](#) – Newport, Pence

The Individualized Plan of Study sequence allows students to develop an individualized focus of study and provides for a path towards completion of the degree if a student does not fulfill all the requirements in one of the other sequences.

Students will work with their advisor to determine the 21 hours of electives required in addition to the required common courses that all IDS Data Science majors are required to complete. The advisor will approve a plan of study outlining the 21 hours of electives.

- [Data Science – Social Demographic/Public Policy Analysis Sequence](#) – Newport, Pence

This sequence was initiated by the Sociology Department. Students in this sequence will apply data science to understanding dynamics of population size and change and to the process of understanding, predicting, and evaluating policy implications.

- [Data Science – Population Health Sequence](#) – Paolucci, Ren

This sequence was initiated by the Health Sciences Department. Students will apply data science to the understanding of public health issues and the interconnected variables that impact the origination and spread of infectious diseases and the effect of health variables on mortality.

There are some issues with some required courses' prerequisites that are not also listed in the required courses. Dr. Hurd will contact Chris Grieshaber, Chair of Health Sciences, to discuss.

There was discussion about concerns related to the growth of Interdisciplinary Studies programs and the lack of a solid organizational structure. Currently, Dr. Hurd serves as the Chair and Dean of IDS and the Council on General Education reviews the proposals. There were questions about who will advise the students in these sequences. Dr. Hurd indicated that this has not been determined yet. One option is to have the advisors in the departments who initiated the sequence proposals may be assigned to advise the students in the respective sequences and the students in the Individualized Plan Sequence may be advised by the advisor in University College who advises the students in the current IDS majors.

Paolucci moved to approve the IDS Data Science major pending the addition of the descriptions for the other three sequences for the catalog copy. Pence seconded. All in favor. 0 against. 0 abstentions.

Paolucci moved to approve the IDS Major in Data Science, Big Data and Computational Intelligence Sequence with the edit of minimum required hours to 72. Ren seconded. All in favor. 0 opposed. 0 abstentions.

Pence moved to approve the IDS Major in Data Science, Business Analytics Sequence with the edit of minimum required hours to 76. Newport seconded. All approved. 0 opposed. 0 abstentions.

Pence moved to approve the IDS Major in Data Science, Social Demographic/Public Policy Analytics Sequence with the change to the Sample Plan of Study to reflect 36 hours of General Education courses instead of 39. Newport seconded. All approved. 0 opposed. 0 abstentions.

Pence moved to approve the IDS Major in Data Science, Individualized Plan of Study Sequence. Newport seconded. All approved. 0 opposed. 0 abstentions.

The vote for the IDS Major in Data Science, Population Health Sequence will be tabled until the prerequisite issues can be resolved.

5. Liaison Reports:

- a. Council for General Education –The CGE has not met since the last UCC meeting.
- b. Council for Teacher Education – The CTE has not met since the last UCC meeting.

6. Staff Report: No report.

7. Miscellaneous: None.

8. ADJOURNMENT:

Leonard motioned to adjourn. Pence seconded. Meeting adjourned at 4:27 p.m.

9. Next Meetings' Tentative Proposal Discussions:

[Molecular and Cellular Biology Sequence \(BSC\) \(revision\)](#) – 3/8 - Pierce, Howe

[Career Specialty Sequence \(ACC\) \(deletion\)](#) – 3/8 - Pierce, Howe

[Family and Consumer Sciences Teacher Ed Sequence \(FCS\) \(revision\)](#) – 3/8 - Pierce, Howe