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| For Academic Affairs and Research Use Only | |
| Proposal Number |  |
| CIP Code: |  |
| Degree Code: |  |

**New Emphasis, Concentration, Option, or Minor Proposal Form**

**[ ] Undergraduate Curriculum Council**

**[X] Graduate Council**

Signed paper copies of proposals submitted for consideration are no longer required. Please type approver name and enter date of approval.

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| |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Department Curriculum Committee Chair** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **COPE Chair (if applicable)** |
| |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Department Chair** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Head of Unit (if applicable)** |
| |  |  | | --- | --- | | Melodie Philhours | 10/4/2022 |   **College Curriculum Committee Chair** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Undergraduate Curriculum Council Chair** |
| |  |  | | --- | --- | | Jim Washam | 10/11/2022 |   **College Dean** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Graduate Curriculum Committee Chair** |
| |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **General Education Committee Chair (if applicable)** | |  |  | | --- | --- | | Alan Utter | 10/26/2022 |   **Vice Chancellor for Academic Affairs** |

1. **Contact Person (Name, Email Address, Phone Number)**

Matt Hill, mdhill@astate.edu, 2280

1. **Proposed Starting Date**

**Spring 2023**

1. **Title of degree program:**

Master of Science in Applied Digital Technology (MS-ADT)

1. **Proposed name of new option/concentration/emphasis/minor:**

Artificial Intelligence and Machine Learning

Cloud and Cybersecurity

Game and App Design

Business Analytics

1. **Reason for proposed action that includes rationale, goals, and student population served**

The MS-ADT program currently does not offer emphases. The general purpose of the new emphases is to provide graduate students in the program with specialized opportunities in the specific areas of technology currently sought by employers. The general goals of the emphases are as follows:

**Artificial Intelligence and Machine Learning:**

Learn the principles of artificial intelligence and machine learning for business and creative industries. Apply basic programming languages/technologies and design/deployment skills through thesis projects which combine theory and technical skill.

**Cloud and Computer Security:**

Learn the principles of cloud computing and computer security for business and creative industries. Apply basic programming languages and technologies through thesis projects which combine theory and technical skill in regard to data, network and internet security risk management.

**Game and App Design:**

Learn the principles of human centered design for business and creative industries. Develop thesis projects which apply basic iOS mobile design/programming skills combined with game design technologies/theory.

**Business Analytics:**

Learn common techniques in business analytics to make informed managerial decisions from business data. Use analytics software to analyze business data via descriptive statistics, correlation and regression analysis, simulation modeling, data mining, and data visualization.

Please see accompanying Program Modification form for changes to the current program to accommodate the proposed emphases.

1. **Provide the following:**
   1. Curriculum outline - List of courses in new option/concentration/emphasis/minor – Underline required courses

**Artificial Intelligence and Machine Learning Emphasis**

ISBA/DIGI 5023 Introduction to Machine Learning

ISBA/DIGI 5063 Analysis and Design of AI

ISBA/DIGI 6023 Design and Development of AI

ISBA/DIGI 6033 AI Deployment Solutions

**Cloud and Cybersecurity Emphasis**

ISBA/DIGI 5123 Software Design Solutions

ISBA/DIGI 5133 Cybersecurity Risk Management

ISBA/DIGI 6123 Network and Data Security

ISBA/DIGI 6133 Internet Security Solutions

**Game and App Design Emphasis**

ISBA/DIGI 5313 User Experience Design Theory

ISBA/DIGI 5323 Swift Programming

ISBA/DIGI 6333 iOS Development

ISBA/DIGI 6343 Game and App Design Studio

**Business Analytics Emphasis**

MIS 6473, Data Mining

MIS 6523, Simulation for Predictive Decision-Making

MIS 6543, Business Analytics

MIS 6573, Advanced Data Mining

* 1. Total semester credit hours required for option/emphasis/concentration/minor

12 hours (for each emphasis)

* 1. Student demand (projected enrollment) for program option

Approximately 15 in each emphasis

1. **Will the new option/emphasis/concentration/minor be offered:**
   1. **Traditional/Face-to-face** Yes
   2. **Distance/Online** Yes
      1. **If yes, indicate mode of distance delivery, and the percentage of courses offered via this modality (<50%, 50-99%, or 100%).**

100%

* + 1. **If online, will it be offered through Global Initiatives/Academic Partnerships (AP)?**

YES

1. **Specify the amount of the additional costs required, the source of funds, and how funds will be used.**

No additional costs or resources – the courses are already being offered

**Bulletin Changes**

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| --- |
| **Instructions** |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](http://www.astate.edu/a/registrar/students/bulletins/index.dot) **and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Please include a before (with changed areas highlighted) and after of all affected sections.**  **\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.** |

(see Grad Council Approved Proposal 2021G\_BU17\_APPROVED):

**Program of Study for the Master of Science in Applied Digital Technology**

The Master of Science in Applied Digital Technology provides students with the knowledge and skills required to be successful in meeting the growing trend of hybrid jobs that require a command of business, data analytics, as well as design and digital technologies. Graduates of this program will be uniquely flexible and possess a broad spectrum of abilities increasingly sought by employers.

**Admission Requirements**

UNCONDITIONAL ADMISSION

An applicant for the M.S. in Applied Digital Technology degree program will receive unconditional admission by meeting the following criteria:

1. Submitted a completed application for admission and a nonrefundable application fee, at least 30 days in advance of registration.

2. Submitted official transcripts from each previously attended college or university. Official transcripts must be submitted directly from the registrar of other institutions.

3. Earned a baccalaureate degree from an accredited institution or its equivalent.

4. Earned a graduate or post-baccalaureate professional degree from a regionally-accredited (U.S.) institution; OR achieved a minimum cumulative undergraduate grade point average of 2.75 on a 4.00 scale; OR achieved a 3.00 GPA on the last 60 hours of coursework (undergraduate, graduate, or combination thereof).

CONDITIONAL ADMISSION

Applicants that meet the first three criteria above but not the fourth criterion may receive conditional admission. Consideration for conditional admission is given to applicants that:

1. Earned a minimum cumulative undergraduate grade point average of 2.50 on a 4.00 scale; OR a 2.75 GPA on the last 60 hours of coursework (undergraduate, graduate, or combination thereof); OR submitted a statement of purpose that will be evaluated by the director of graduate programs and the graduate programs admissions committee.

The following course restrictions will pertain to conditionally admitted applicants:

• Conditionally admitted students in the traditional face-to-face program can take no more than 6 graduate credit hours during a traditional length semester.

• Conditionally admitted students in the online program can take no more than 3 graduate credit hours during each seven-week term.

Conditionally admitted students will be moved to unconditional admission status upon completion of 6 hours with a grade of “B” or better in each course. While conditionally admitted, a grade of “C” or lower in any graduate-level course will result in suspension from the graduate program.

**(Please insert the following after the new core courses section indicated in the accompanying Program Modification form)**

**Emphasis**

Students complete one of the following 12-credit hour emphases as part of the program.

***Artificial Intelligence and Machine Learning***: Learn the principles of artificial intelligence and machine learning for business and creative industries. Apply basic programming languages/technologies and design/deployment skills through thesis projects which combine theory and technical skill.

***Cloud and Cybersecurity***: Learn the principles of cloud computing and computer security for business and creative industries. Apply basic programming languages and technologies through thesis projects which combine theory and technical skill in regard to data, network and internet security risk management.

***Game and App Design***: Learn the principles of human centered design for business and creative industries. Develop thesis projects which apply basic iOS mobile design/programming skills combined with game design technologies/theory.

***Business Analytics***: Learn common techniques in business analytics to make informed managerial decisions from business data. Use analytics software to analyze business data via descriptive statistics, correlation and regression analysis, simulation modeling, data mining, and data visualization.

**Elective Courses**

Nine hours of graduate electives may be selected in statistics and business (approval granted by graduate program director).

**Applied Digital Technology**

**Master of Science**

**Emphasis in Artificial Intelligence and Machine Learning**

|  |  |
| --- | --- |
| **University Requirements:** | |
| See Graduate Degree Policies for additional information (p. 47) |  |
| **Program Core Courses:** | **Sem. Hrs.** |
| (See Program Core Courses section) | 12 |
| **Artificial Intelligence and Machine Learning Emphasis:** | **Sem. Hrs.** |
| ISBA/DIGI 5023, Introduction to Machine Learning | 3 |
| ISBA/DIGI 5063, Analysis and Design of AI | 3 |
| ISBA/DIGI 6023, Design and Development of AI | 3 |
| ISBA/DIGI 6033, AI Deployment Solutions | 3 |
| Sub-total | 12 |
| **Electives:** | **Sem. Hrs.** |
| Approved electives in business and statistics | 9 |
| **Total Required Hours:** | 33 |

**Applied Digital Technology**

**Master of Science**

**Emphasis in Cloud and Cybersecurity**

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| --- | --- |
| **University Requirements:** | |
| See Graduate Degree Policies for additional information (p. 47) |  |
| **Program Core Courses:** | **Sem. Hrs.** |
| (See Program Core Courses section) | 12 |
| **Cloud and Cybersecurity Emphasis:** | **Sem. Hrs.** |
| ISBA/DIGI 5123, Software Design Solutions | 3 |
| ISBA/DIGI 5133, Cybersecurity Risk Management | 3 |
| ISBA/DIGI 6123, Network and Data Security | 3 |
| ISBA/DIGI 6133, Internet Security Solutions | 3 |
| Sub-total | 12 |
| **Electives:** | **Sem. Hrs.** |
| Approved electives in business and statistics | 9 |
| **Total Required Hours:** | 33 |

**Applied Digital Technology**

**Master of Science**

**Emphasis in Game and App Design**

|  |  |
| --- | --- |
| **University Requirements:** | |
| See Graduate Degree Policies for additional information (p. 47) |  |
| **Program Core Courses:** | **Sem. Hrs.** |
| (See Program Core Courses section) | 12 |
| **Game and App Design Emphasis:** | **Sem. Hrs.** |
| ISBA/DIGI 5313, User Experience Design | 3 |
| ISBA/DIGI 5323, iOS Design and Development | 3 |
| ISBA/DIGI 6333, Game Design and Development | 3 |
| ISBA/DIGI 6343, Game and App Design Studio | 3 |
| Sub-total | 12 |
| **Electives:** | **Sem. Hrs.** |
| Approved electives in business and statistics | 9 |
| **Total Required Hours:** | 33 |

**Applied Digital Technology**

**Master of Science**

**Emphasis in Business Analytics**

|  |  |
| --- | --- |
| **University Requirements:** | |
| See Graduate Degree Policies for additional information (p. 47) |  |
| **Program Core Courses:** | **Sem. Hrs.** |
| (See Program Core Courses section) | 12 |
| **Business Analytics Emphasis:** | **Sem. Hrs.** |
| MIS 6473, Data Mining | 3 |
| MIS 6523, Simulation for Predictive Decision-Making | 3 |
| MIS 6543, Business Analytics | 3 |
| MIS 6573, Advanced Data Mining | 3 |
| Sub-total | 12 |
| **Electives:** | **Sem. Hrs.** |
| Approved electives in business and statistics | 9 |
| **Total Required Hours:** | 33 |

**FINAL:**

**Program of Study for the Master of Science in Applied Digital Technology**

The Master of Science in Applied Digital Technology provides students with the knowledge and skills required to be successful in meeting the growing trend of hybrid jobs that require a command of business, data analytics, as well as design and digital technologies. Graduates of this program will be uniquely flexible and possess a broad spectrum of abilities increasingly sought by employers.

**Admission Requirements**

UNCONDITIONAL ADMISSION

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***Business Analytics***: Learn common techniques in business analytics to make informed managerial decisions from business data. Use analytics software to analyze business data via descriptive statistics, correlation and regression analysis, simulation modeling, data mining, and data visualization.

**Elective Courses**

Nine hours of graduate electives may be selected in statistics and business (approval granted by graduate program director).

**Applied Digital Technology**

**Master of Science**

**Emphasis in Artificial Intelligence and Machine Learning**

|  |  |
| --- | --- |
| **University Requirements:** | |
| See Graduate Degree Policies for additional information (p. 47) |  |
| **Program Core Courses:** | **Sem. Hrs.** |
| (See Program Core Courses section) | 12 |
| **Artificial Intelligence and Machine Learning Emphasis:** | **Sem. Hrs.** |
| ISBA/DIGI 5023, Introduction to Machine Learning | 3 |
| ISBA/DIGI 5063, Analysis and Design of AI | 3 |
| ISBA/DIGI 6023, Design and Development of AI | 3 |
| ISBA/DIGI 6033, AI Deployment Solutions | 3 |
| Sub-total | 12 |
| **Electives:** | **Sem. Hrs.** |
| Approved electives in business and statistics | 9 |
| **Total Required Hours:** | 33 |

**Applied Digital Technology**

**Master of Science**

**Emphasis in Cloud and Cybersecurity**

|  |  |
| --- | --- |
| **University Requirements:** | |
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| **Program Core Courses:** | **Sem. Hrs.** |
| (See Program Core Courses section) | 12 |
| **Cloud and Cybersecurity Emphasis:** | **Sem. Hrs.** |
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| ISBA/DIGI 5133, Cybersecurity Risk Management | 3 |
| ISBA/DIGI 6123, Network and Data Security | 3 |
| ISBA/DIGI 6133, Internet Security Solutions | 3 |
| Sub-total | 12 |
| **Electives:** | **Sem. Hrs.** |
| Approved electives in business and statistics | 9 |
| **Total Required Hours:** | 33 |

**Applied Digital Technology**

**Master of Science**

**Emphasis in Game and App Design**

|  |  |
| --- | --- |
| **University Requirements:** | |
| See Graduate Degree Policies for additional information (p. 47) |  |
| **Program Core Courses:** | **Sem. Hrs.** |
| (See Program Core Courses section) | 12 |
| **Game and App Design Emphasis:** | **Sem. Hrs.** |
| ISBA/DIGI 5313, User Experience Design | 3 |
| ISBA/DIGI 5323, iOS Design and Development | 3 |
| ISBA/DIGI 6333, Game Design and Development | 3 |
| ISBA/DIGI 6343, Game and App Design Studio | 3 |
| Sub-total | 12 |
| **Electives:** | **Sem. Hrs.** |
| Approved electives in business and statistics | 9 |
| **Total Required Hours:** | 33 |

**Applied Digital Technology**

**Master of Science**

**Emphasis in Business Analytics**

|  |  |
| --- | --- |
| **University Requirements:** | |
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| **Program Core Courses:** | **Sem. Hrs.** |
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| **Business Analytics Emphasis:** | **Sem. Hrs.** |
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| MIS 6523, Simulation for Predictive Decision-Making | 3 |
| MIS 6543, Business Analytics | 3 |
| MIS 6573, Advanced Data Mining | 3 |
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