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

**Bulletin / Banner Change Transmittal 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.

Email completed proposals to curriculum@astate.edu for inclusion in curriculum committee agenda.

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| Hai Jiang | 4/7/2020 |

**Department Curriculum Committee Chair** |

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**COPE Chair (if applicable)** |
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| Hung-Chi Su | 4/7/2020 |

**Department Chair:**  |

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**Head of Unit (If applicable)**   |
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| Brandon A. Kemp | 5/4/2020 |

**College Curriculum Committee Chair** |

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**Undergraduate Curriculum Council Chair** |
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| Abhijit Bhattacharyya | 5/4/2020 |

**College Dean** |

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**Graduate Curriculum Committee Chair** |
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**General Education Committee Chair (If applicable)**   |

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**Vice Chancellor for Academic Affairs** |

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

Hung-Chi Su, suh@astate.edu, 8119

**2.Proposed Change**

Clarification for the elective courses in Data Science emphasis and Cyber Security emphasis areas in Computer Science master’s degrees

**3.Effective Date**

8/15/2020

**4.Justification –** *Please provide details as to why this change is necessary.*

This modification will clarify previous changes in electives for the Data Science emphasis and Cyber Security emphasis after the last curriculum update (2019G\_ECS08\_APPROVED\_BC\_Computer-Science-Master-emphasis-curriculum-updates. This will make clear that a course cannot be counted twice, as both required and elective, for an emphasis.

In addition, this modification also adds one course in cyber security emphasis to provide the student with more choices in selecting classes.

**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. Follow the following guidelines for indicating necessary changes.** **\*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.** - Deleted courses/credit hours should be marked with a red strike-through (~~red strikethrough~~)- New credit hours and text changes should be listed in blue using enlarged font (blue using enlarged font). - Any new courses should be listed in blue bold italics using enlarged font (***blue bold italics using enlarged font***)*You can easily apply any of these changes by selecting the example text in the instructions above, double-clicking the ‘format painter’ icon 🡪 , and selecting the text you would like to apply the change to.**Please visit* [*https://youtu.be/yjdL2n4lZm4*](https://youtu.be/yjdL2n4lZm4) *for more detailed instructions.* |

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Emphasis Area (Cyber Security): Sem. Hrs.

 Core (select three of the following): 9

 CS 6123, Software Security

 CS 6313, Data Security

 CS 6323, Computer Security

 CS 6333, Network and Internet Security

 CS 6353, Hardware Security

 Emphasis Elective (select one of the following): 3

 CS 6123, Software Security (if not taken previously)

 CS 6343, Cloud Security

 CS 6353, Hardware Security (if not taken previously)

 LAW 6033, Cyberlaw and E-Commerce

 CS Electives 6

 CS, MATH, and/or STAT Electives, 6

 Subject to the prior approval of the Computer Science Curriculum Committee.

Sub-total 24

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Emphasis Area (Data Science): Sem. Hrs.

 Core (select three of the following): 9

 CS 5543, Database Systems

 CS 5623, Fundamentals of Data Science

 CS 6443, Machine Learning

 CS 6523, Data Mining Techniques

 Emphasis Elective (select one of the following): 3

 CS 6443, Machine Learning (if not taken previously)

 CS 6543, Advanced Database Systems

 STAT 6433, Time Series Analysis

 STAT 6643, Multivariate Analysis

 STAT 6653, Data Analysis I: Regression Analysis

 STAT 6663, Data Analysis II: Analysis of Variance

 CS Electives 6

 CS, MATH, and/or STAT Electives, 6

 Subject to the prior approval of the Computer Science Curriculum Committee.

Sub-total 24