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| For Academic Affairs and Research Use Only | |
| CIP Code: | 11.0101 |
| Degree Code: | 6180 |

**New Course Proposal Form**

**[ ] Undergraduate Curriculum Council**

**[X] Graduate Council**

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| **[ ] New Course or [X]Experimental Course (1-time offering) (Check one box)** |

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](mailto:curriculum@astate.edu) for inclusion in curriculum committee agenda.

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| E. T. Hammerand 10/25/2016 **Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **COPE Chair (if applicable)** |
| Hung-Chi Su 10/25/2016 **Department Chair:** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **General Education Committee Chair (If applicable)** |
| David F. Gilmore 11/8/2016 **College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Undergraduate Curriculum Council Chair** |
| John M. Pratte 11/8/2016 **College Dean** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Graduate Curriculum Committee Chair** |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Vice Chancellor for Academic Affairs** |

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

Hung-Chi Su, suh@astate.edu, 972-3978

2. Proposed Starting Term and Bulletin Year

2017 Spring

3. Proposed Course Prefix and Number (Confirm that number chosen has not been used before. For variable credit courses, indicate variable range. *Proposed number for experimental course is 9*. )

CS 5923

4. Course Title – if title is more than 30 characters (including spaces), provide short title to be used on transcripts. Title cannot have any symbols (e.g. slash, colon, semi-colon, apostrophe, dash, and parenthesis). Please indicate if this course will have variable titles (e.g. independent study, thesis, special topics).

Mobile Application Development

5. Brief course description (40 words or fewer) as it should appear in the bulletin.

Topics on mobile application development through a project-based environment. Creation of mobile applications for iOS

and Android devices, deployment of applications to mobile hardware and how to effectively work in a team environment

for application development.

6. Prerequisites and major restrictions. (Indicate all prerequisites. If this course is restricted to a specific major, which major. If a student does not have the prerequisites or does not have the appropriate major, the student will not be allowed to register).

1. Are there any prerequisites? Yes
   1. If yes, which ones?

CS 3113 or "B" or better in CS 5032 or consent of instructor.

* 1. Why or why not?

The material covered by the course requires significant experience in computer programming and an understanding of advanced programming concepts.

1. Is this course restricted to a specific major? No
   1. If yes, which major?

7. Course frequency(e.g. Fall, Spring, Summer). *Not applicable to Graduate courses.*

not applicable (spring)

8. Will this course be lecture only, lab only, lecture and lab, activity, dissertation, experiential learning, independent study, internship, performance, practicum, recitation, seminar, special problems, special topics, studio, student exchange, occupational learning credit, or course for fee purpose only (e.g. an exam)? Please choose one.

Lecture only

9. What is the grade type (i.e. standard letter, credit/no credit, pass/fail, no grade, developmental)?

Standard letter

10. Is this course dual listed (undergraduate/graduate)?

Yes

11. Is this course cross listed? (If it is, all course entries must be identical including course descriptions. It is important to check the course description of an existing course when adding a new cross listed course.)

No

1. If yes, please list the prefix and course number of cross listed course.

Enter text...

1. Are these courses offered for equivalent credit? No

Please explain. Enter text...

12. Is this course in support of a new program? No

a. If yes, what program?

Enter text...

13. Does this course replace a course being deleted? No

a. If yes, what course?

Enter text...

14. Will this course be equivalent to a deleted course? No

a. If yes, which course?

Enter text...

15. Has it been confirmed that this course number is available for use?  
 Yes

*If no: Contact Registrar’s Office for assistance.*

16. Does this course affect another program?  
 No

If yes, provide contact information from the Dean, Department Head, and/or Program Director whose area this affects.

**Course Details**

17. Outline (The course outline should be topical by weeks and should be sufficient in detail to allow for judgment of the content of the course.)

Weeks: Topics

1 Introduction to Mobile technologies and programming environments

2 Programming languages and tools

3 Mobile Application Design

4 Model-View-Controller and User Interfaces

5 Building Controls 1

6 Building Controls 2

7 Team Project Software Life Cycle

8 Mobile Media

9 Mobile Communication

10 Other Mobile Technologies

11 Mobile Application Deployment

12 Testing and Debugging Mobile Apps

13 Portability Issues

14 Project Presentations

18. Special features (e.g. labs, exhibits, site visitations, etc.)

none

19. Department staffing and classroom/lab resources

The department's elective course rotation will be adjusted to allow for offerings of this course; existing lab resources will be utilized.

1. Will this require additional faculty, supplies, etc.?

no

20. Does this course require course fees? No

*If yes: please attach the New Program Tuition and Fees form, which is available from the UCC website.*

**Course Justification**

21. Justification for course being included in program. Must include:

a. Academic rationale and goals for the course (skills or level of knowledge students can be expected to attain)

Mobile application programming has seen a tremendous amount of growth as a result of the growth in the use of mobile devices. The course serves to prepare students majoring in Computer Science to be professional application developers on mobile platforms.

Goals Include:

* ability to understand and describe the architecture of a mobile application.
* ability to understand, describe and use the MVC interface architecture.
* ability to understand and use event programming for mobile applications.
* ability to understand and construct a user interface for a mobile application.
* ability to understand and construct the controls for a mobile application.
* ability to understand and integrate a database within a mobile application.
* ability to understand and integrate communications within a mobile application.

b. How does the course fit with the mission established by the department for the curriculum? If course is mandated by an accrediting or certifying agency, include the directive.

One part of the mission is to maintain the curriculum with updated technologies. The state of the art in the software industry has seen rapid growth in mobile application programming in recent years; our students need to be prepared for this new development paradigm and current in state-of-the-art technologies. This will give students better insights into the current state of industry than traditional native-platform focused programming courses alone.

c. Student population served.

Graduate students majoring in the department's Master of Science program.

d. Rationale for the level of the course (lower, upper, or graduate).

The graduate level of the course corresponds to the requirement that students already be well-versed in the fundamentals of programming, and ready to learn about applications of that knowledge in a modern environment.

**Assessment**

**University Outcomes**

22. Please indicate the university-level student learning outcomes for which this new course will contribute. Check all that apply.

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| * 1. Global Awareness | * 1. Thinking Critically | * 1. Information Literacy |

**Relationship with Current Program-Level Assessment Process**

23. What is/are the intended program-level learning outcome/s for students enrolled in this course? Where will this course fit into an already existing program assessment process?

* ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
* ability to function effectively on teams to accomplish a common goal.
* use current techniques, skills, and tools necessary for computing practice.

24. Considering the indicated program-level learning outcome/s (from question #23), please fill out the following table to show how and where this course fits into the program’s continuous improvement assessment process.

*For further assistance, please see the ‘Expanded Instructions’ document available on the UCC - Forms website for guidance, or contact the Office of Assessment at 870-972-2989.*

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| **Program-Level Outcome 1 (from question #23)** | ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs |
| Assessment Measure | The complete project will be used as a direct assessment of the outcome. |
| Assessment  Timetable | This course’s outcomes will be assessed on a 4-year basis during the spring semester (every other offering of this course). |
| Who is responsible for assessing and reporting on the results? | Course instructor in coordination with the department assessment committee. |

*(Repeat if this new course will support additional program-level outcomes)*

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| **Program-Level Outcome 2 (from question #23)** | ability to function effectively on teams to accomplish a common goal |
| Assessment Measure | Teams will be assessed as well as each individual contribution to the team. |
| Assessment  Timetable | This course’s outcomes will be assessed on a 4-year basis during the spring semester (every other offering of this course). |
| Who is responsible for assessing and reporting on the results? | Course instructor in coordination with the department assessment committee. |

*(Repeat if this new course will support additional program-level outcomes)*

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| **Program-Level Outcome 3 (from question #23)** | use current techniques, skills, and tools necessary for computing practice |
| Assessment Measure | The complete project will be used as a direct assessment of the outcome. |
| Assessment  Timetable | This course’s outcomes will be assessed on a 4-year basis during the spring semester (every other offering of this course). |
| Who is responsible for assessing and reporting on the results? | Course instructor in coordination with the department assessment committee. |

*(Repeat if this new course will support additional program-level outcomes)*

**Course-Level Outcomes**

25. What are the course-level outcomes for students enrolled in this course and the assessment measures and benchmarks for student-learning success?

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| **Outcome 1** | Students will be able to understand and describe the architecture of a mobile application. |
| Which learning activities are responsible for this outcome? | The construction and presentation of a mobile program for the course project will be used to assess the student’s understanding of the architecture and ability to describe the processes and procedures in the application construction. |
| Assessment Measure and Benchmark | A rubric is used to assess the student outcome and a 75% has been designated as a passing score for this outcome. |

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| **Outcome 2** | Students will be able to understand, describe and use the MVC interface architecture. |
| Which learning activities are responsible for this outcome? | The project will be used in the assessment of the outcome. An MVC is an essential part of the course project. |
| Assessment Measure and Benchmark | A rubric is used to assess the student outcome as part of the construction of the project and a 75% has been designated as a passing score for this outcome. |

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| **Outcome 3** | Students will be able to understand and use event programming for mobile applications. |
| Which learning activities are responsible for this outcome? | The project will be used in the assessment of the outcome. Event processing is an essential part of the course project. |
| Assessment Measure and Benchmark | A rubric is used to assess the student outcome as part of the construction of the project and a 75% has been designated as a passing score for this outcome. |

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| **Outcome 4** | Students will be able to understand and construct a user interface for a mobile application. |
| Which learning activities are responsible for this outcome? | The project will be used in the assessment of the outcome. A UI is an essential part of the course project. |
| Assessment Measure and Benchmark | A rubric is used to assess the student outcome as part of the presentation and construction of the project and a 75% has been designated as a passing score for this outcome. |

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| **Outcome 5** | Students will be able to understand and construct the controls for a mobile application. |
| Which learning activities are responsible for this outcome? | The project will be used in the assessment of the outcome. Controls are an essential part of the course project. |
| Assessment Measure and Benchmark | A rubric is used to assess the student outcome as part of the construction of the project and a 75% has been designated as a passing score for this outcome. |

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| **Outcome 6** | Students will be able to understand and integrate a database within a mobile application. |
| Which learning activities are responsible for this outcome? | The project will be used in the assessment of the outcome. A database is an essential part of the course project. |
| Assessment Measure and Benchmark | A rubric is used to assess the student outcome as part of the construction of the project and a 75% has been designated as a passing score for this outcome. |

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| **Outcome 7** | Students will be able to understand and integrate communications within a mobile application. |
| Which learning activities are responsible for this outcome? | The project will be used in the assessment of the outcome. Communications are an essential part of the course project. |
| Assessment Measure and Benchmark | A rubric is used to assess the student outcome as part of the construction of the project and a 75% has been designated as a passing score for this outcome. |

*(Repeat if needed for additional outcomes)*

**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.* |

not applicable (special course)