WMU - Internal Curriculum Form - New

Department Contact Information:
- Start Date: 09-FEB-2018
- College: A
- Department: CS
- Initiator name: Steve Carr
- Department email: steve.carr@wmich.edu
- Proposed effective term: 201940
- Does course need General Education approval? N
- Will course be used in teacher education? N
- If 5000 level course, prerequisites apply to:
  - G
  - New Course CS 5610
  - New course selected: This new course is not seeking approval as a general education course.

1. Proposed course prefix and number:
   CS 5610

2. Proposed credit hours:
   4

3. Proposed course title:
   Advanced R Programming for Data Science

4. Proposed course prerequisites:
   CS 1610 and STAT 3640

5. Proposed course corequisites:
   none

6. Proposed course prerequisites that may be taken concurrently (before or at the same time):
   none

7. Minimum grade for prerequisites (default grades are D for Undergrad and C for Grad):
   C

8. Major and/or minor restrictions:
   Not Applicable

9. List all the four-digit major and/or minor codes (from Banner) that are to be included or excluded:
   none

10. Classification restrictions:
    Exclude

11. List all the classifications (freshman, sophomore, junior, senior) that are to be included or excluded:
    FR, SO, JR

12. Level restriction:
    Not Applicable

13. List the level (undergraduate, graduate) that is to be included or excluded:
    Not Applicable

14. Do prerequisites and corequisites for 5000-level courses apply to undergraduates, graduates, or both?
    UG

15. Is this a multi-topic course?
    No

16. Proposed course title to be entered in Banner:
    Advanced R for Data Science

17. Is this course repeatable for credit?
18. Is this course mandatory credit/no credit? 
No

19. Select class type: 
Lecture

20. How many contact hours per week for this course? 
4

A. Please choose Yes or No to indicate if this class is a Teacher Education class: 
No

B. Please choose the applicable class level: 
Graduate

C. Please choose Yes or No to indicate if this class is a General Education class: 
No

D. Explain briefly and clearly the proposed improvement. 
Add course as part of the Master of Science in Data Science program.

E. Rationale. Give your reason(s) for the proposed improvement. (If your proposal includes prerequisites, justify those, too.). 
Data scientists need advanced skills in R programming for employment and research.

F. List the student learning outcomes for the proposed course or the revised or proposed major, minor, or concentration. These are the outcomes that the department will use for future assessments of the course or program. 
After successfully completing the course a student will be able to:

1) Read, understand and write R code well.
2) Develop complex R modules using functional programming and R objects.
3) Debug and profile R code.
4) Use and develop automated testing for R modules.

Department Curriculum Chair approver: Li Yang 
Date: 28-FEB-2018

Comment:

Chair approver: Steve Carr
Date: 28-FEB-2018

Comment:

* Curriculum Committee Approval

- [ ] Approve
- [ ] Deny

Reason for denial:

Comment:

Enter Proposal number, only if approved:

Proposal Number, 

[Complete] [Save & Close] [Cancel]

Attachments

[Attach File]
CS 5610 Catalog Description

This course provides the student with an advanced understanding of the R system. It prepares the student for effective usage of and program development in the R system at the graduate level. This includes: a deep understanding of functional programming in R and R objects, and how to develop reliable R programs. R graphics for interactive data exploration, producing publication quality graphics and producing web-based graphics will also be covered. This course will be very small team project oriented.