Missouri State

Curricular Action Workflow

designed by Computer Ser

Delete Course Proposal Form

Submitted on 03/23/2021 by Brian Greene (Briangreene@missouristate.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

BIO369 General Ecology

Is this course a requirement or course choice within any current program, including those outside your department?

- ( ) No
- ( ) Yes (A corresponding program change course form must be submitted to remove the deleted course from the program requirements. You should also notify other departments using this course of your plans to delete the course.)

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Online catalog description.

Prerequisite: BIO 122 and MTH 135 or higher. Introduction to the basic concepts of ecology. Public Affairs Capstone Experience course. 4(3-2) F,S

Reason for proposed Deletion

BIO 369 has been discontinued and replaced by a combination of separate lecture (BIO 367) and lab (BIO 368) courses. We apparently did not request that BIO 369 be deleted from the catalog when BIO 367 and 368 were created.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [ ] Routine or annual review/assessment of curriculum
- [ ] Faculty Input
- [ ] Student Input
- [ ] Accreditation/certification compliance
- [x] Review of catalog information
- [ ] Other (be specific):

What is the date that this course change was approved by departmental or program faculty? 02/03/2017

Current Status:

Department Head Review

Proposal Progress:

This proposal is waiting for its first review.

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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Curricular Action Workflow

designed by Computer Ser

Change Course Proposal Form

Submitted on 03/09/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

CSC450 Introduction to Software Engineering

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

CSC 450 Introduction to Software Engineering

Prerequisite: any two courses from CSC 325, CSC 335, and CSC 360. This course provides students with a capstone project experience. Focus will be on the software engineering concepts including requirements gathering and analysis, software architecture and design, testing, and basic project management. A semester-long group project will require application of the software engineering concepts from requirements gathering to deployment and evaluation. Successful completion of the computer science major field test (MFT) with at least a score of 50th percentile is required for passing the course. 4(4-0) F,S

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

CSC 450 Introduction to Software Engineering

Prerequisite: any two courses from CSC 325, CSC 335, and CSC 360. This course provides students with a capstone project experience. Focus will be on the software engineering concepts including requirements gathering and analysis, software architecture and design, testing, and basic project management. A semester-long group project will require application of the software engineering concepts from requirements gathering to deployment and evaluation. ~~Successful completion of the computer science major field test (MFT) with at least a score of 50th percentile is required for passing the course.~~ **Successful completion of the computer science major field test (MFT) with at least a score of 145 for Computer Science-Computer Science option and 140 for Computer Science-Softare Development option is required for passing the course.** 4(4-0) F,S

POWERED BY TINYMCE

What is changing? Check all boxes that apply.

☐ Course Code	☐ Course Number (Check Availability)	☐ Title	☐ Prerequisite
☐ Credit Hours/Contact Hours	☐ Periodicity	☑ Description	

Reason for proposed change

We are changing the MFT score from percentile to a number and having a different requirement for CS-CS and CS-SD option students.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? ○ No ○ Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [ ] Routine or annual review/assessment of curriculum
- [x] Faculty Input
- [x] Student Input
- [ ] Accreditation/certification compliance
- [ ] Review of catalog information
- [ ] Other (be specific):
- [x] Check if this is a non-substantive change.

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 01/08/2021

Current Status:
Department Head Review

Proposal Progress:
This proposal is waiting for its first review.

Review Comments:
No comments have been added to this proposal.

No review notes have been added.

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Missouri State

Curricular Action Workflow

Change Course Proposal Form

Submitted on 03/09/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

CSC702 Seminar II

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

CSC 702 Seminar II

Prerequisite: CSC 701. Continuation of CSC 701 with a focus on tools and methods for data analysis. Students will make oral presentations that report experimental results and will attend presentations by faculty, visitors, and other students. Graded Pass/Not Pass only. 2(2-0) S

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

CSC 702 Seminar II

Prerequisite: CSC 701 **or concurrent enrollment**. Continuation of CSC 701 with a focus on tools and methods for data analysis. Students will make oral presentations that report experimental results and will attend presentations by faculty, visitors, and other students. Graded Pass/Not Pass only. 2(2-0) S

POWERED BY TINYMCE

What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [x] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [ ] Description

Reason for proposed change

It is very critical to complete CSC 702 early in the program as students decide whether to pursue a thesis or not . Thesis students can start working on their thesis the next semester after CSC 702.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? (•) No ( ) Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [x] Routine or annual review/assessment of curriculum
- [x] Faculty Input
- [x] Student Input
- [ ] Accreditation/certification compliance
- [ ] Review of catalog information
- [ ] Other (be specific):

Check if this is a non-substantive change.

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 12/01/2020

Current Status:

Department Head Review

Proposal Progress:

This proposal is waiting for its first review.

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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Curricular Action Workflow

Change Course Proposal Form

Submitted on 03/09/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

CSC736 Machine Learning

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

CSC 736 Machine Learning

Prerequisite: CSC 325. Machine learning explores the study and construction of algorithms that can learn from data. This study combines ideas from both computer science and statistics. The study of learning from data is playing an increasingly important role in numerous areas of science and technology. This course will familiarize students with several frequently used machine learning models and algorithms to attack real world problems and prepare students for research or industry application of machine learning techniques. 3(3-0) D

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

CSC 736 Machine Learning

Prerequisite: CSC 325 **or CSC 611 or equivalent**. Machine learning explores the study and construction of algorithms that can learn from data. This study combines ideas from both computer science and statistics. The study of learning from data is playing an increasingly important role in numerous areas of science and technology. This course will familiarize students with several frequently used machine learning models and algorithms to attack real world problems and prepare students for research or industry application of machine learning techniques. 3(3-0) D

POWERED BY TINYMCE

What is changing? Check all boxes that apply.

- ☐ Course Code
- ☐ Course Number (Check Availability)
- ☐ Title
- ☑ Prerequisite
- ☐ Credit Hours/Contact Hours
- ☐ Periodicity
- ☐ Description

Reason for proposed change

CSC 325 and CSC 611 are essentially the same courses. Graduate Students who do not have the CSC 325 requirement met will take CSC 611. Students who did not get their undergrad from MSU might have taken a similar course , hence we are adding equivalent.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? ◉ No ○ Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [x] Routine or annual review/assessment of curriculum
- [x] Faculty Input
- [ ] Student Input
- [ ] Accreditation/certification compliance
- [ ] Review of catalog information
- [ ] Other (be specific):

- [x] Check if this is a non-substantive change.

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 12/01/2020

Current Status:
Department Head Review

Proposal Progress:
This proposal is waiting for its first review.

Review Comments:
No comments have been added to this proposal.

No review notes have been added.

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Change Course Proposal Form

Submitted on 03/09/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

CSC765 Ubiquitous Computing and Internet of Things

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

CSC 765 Ubiquitous Computing and Internet of Things

Prerequisite: CSC 665 or equivalent course or background approved by the instructor. An introduction to some of the fundamental concepts and state-of-the-art research in the areas of ubiquitous computing (UbiComp). A significant portion of the course will cover the Internet of Things (IoT). Less emphasis will be given to the hardware and device level details. The major focus of this course is Internet Evolution and Wireless Technologies, Location Services in UbiComp, context-aware computing, privacy and security, wearable computing, mobile OS, IoT and data analytics, cloud computing. Students will learn to carry out research in UbiComp and IoT. 3(3-0) S

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

CSC 765 Ubiquitous Computing and Internet of Things

Prerequisite: **CSC 565 or** CSC 665 or equivalent course or background approved by the instructor. An introduction to some of the fundamental concepts and state-of-the-art research in the areas of ubiquitous computing (UbiComp). A significant portion of the course will cover the Internet of Things (IoT). Less emphasis will be given to the hardware and device level details. The major focus of this course is Internet Evolution and Wireless Technologies, Location Services in UbiComp, context-aware computing, privacy and security, wearable computing, mobile OS, IoT and data analytics, cloud computing. Students will learn to carry out research in UbiComp and IoT. 3(3-0) S

POWERED BY TINYMCE

What is changing? Check all boxes that apply.

- ☐ Course Code
- ☐ Course Number (Check Availability)
- ☐ Title
- ☑ Prerequisite
- ☐ Credit Hours/Contact Hours
- ☐ Periodicity
- ☐ Description

Reason for proposed change

CSC 565 and CSC 665 are essentially the same courses. Graduate Students who do not have the CSC 565 requirement met will take CSC 665. The undergraduate students from MSU who have taken CSC 565 will be eligible to take this course with the current change.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? ◉ No ○ Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [x] Routine or annual review/assessment of curriculum
- [x] Faculty Input
- [ ] Student Input
- [ ] Accreditation/certification compliance
- [ ] Review of catalog information
- [ ] Other (be specific):

- [x] Check if this is a non-substantive change.

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 12/01/2020

Current Status:
Department Head Review

Proposal Progress:
This proposal is waiting for its first review.

Review Comments:
No comments have been added to this proposal.

No review notes have been added.

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Curricular Action Workflow

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New Course Proposal Form

Submitted on 03/10/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

***All fields require input**

- (●) New COURSE
- ( ) New REGULAR PERMANENT SECTION of an existing variable content course. If a new regular section of an existing variable topics course, enter the existing course number below

Course Code: CSC

Course Number: (Check Availability) 630

Course Title: Introduction to Data Science

Will this course become part of a program? (●) No ( ) Yes (A corresponding program change form must be submitted)

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Prerequisite/Co-requisite or enter 'None': Admission to a CSC graduate program or department permission

Catalog Course Description: (Include any Pass/Not Pass grading restrictions, repeatable limits, limitation on course applicability,

UG/GR parallel course, etc.)

An introduction to software and techniques used in data science. Topics will include sources of data, data preparation, data analysis, use of software tools, development of data analysis software, and ethical and legal considerations.

234/30000 character limit.

Credit Hours: 3 Lecture Contact Hours: 3 Lab Contact Hours: 3

Note: If variable credit, enter the highest number and add to end of course description. (e.g. "Variable credit, may be taken 1-3 hours.")

Periodicity. Check all that apply.

- [ ] Fall
- [ ] Fall (even-numbered years only)
- [ ] Fall (odd-numbered years only)
- [ ] Spring
- [ ] Spring (even-numbered years only)
- [ ] Spring (odd-numbered years only)
- [ ] Summer
- [x] On Demand only

Complete Catalog Description:
CSC 630 Introduction to Data Science
Prerequisite: Admission to a CSC graduate program or department permission
An introduction to software and techniques used in data science. Topics will include sources of data, data preparation, data analysis, use of software tools, development of data analysis software, and ethical and legal considerations.
Credit hours: 3 Lecture contact hours: 3 Lab contact hours: 3
Typically offered: On Demand only

Include sample syllabus (list topics, course goals.) Use text box OR upload only file types of PDF, DOC or DOCX.

0/30000 character limit.
Attached View Attachment

Purpose of Course

Data science is a critical subject as there is a lot of demand for data scientists. and students majoring in computer science need exposure to this subject.

156/30000 character limit.

Relationship to Other Departments

None

4/30000 character limit.

Is there a graduate/undergraduate parallel course to this one? ◉ No ○ Yes

Enter parallel course number

nullnull null

How do these classes differ?

0/30000 character limit.

New Course Resource Information

Anticipated Average Enrollment per section:	30	Maximum Enrollment Limit per section:	35
Anticipated Average Enrollment per semester:	30	Maximum Enrollment Limit per semester:	35
Anticipated Average Enrollment per year:	60	Maximum Enrollment Limit per year:	70
Faculty Load Assignment (equated hours):	3		

Is another course being deleted? ◉ No ○ Yes

Select course number and title being deleted.

nullnull null

What will this course require in the way of:

Additional library Holdings

None

4/30000 character limit.

Additional computer resources

None

4/30000 character limit.

Additional or remodeled facilities

None

4/30000 character limit.

Additional equipment or supplies

None

4/30000 character limit.

Additional travel funds

None

4/30000 character limit.

Additional faculty; general vs specialized

None

4/30000 character limit.

Additional faculty; regular vs per-course

None

4/30000 character limit.

Other additional expenses

None

4/30000 character limit.

If additional faculty are not required, how will faculty be made available to teach this course?

We are making a new hire in Fall 2021 which enables us to cover this course without any additional faculty.

107/30000 character limit.

List names of current faculty qualified and available to teach this course

Lloyd Smith
Jamil Saquer
Mohammed Belkhouche

44/30000 character limit.

What is the anticipated source of students for this course?

Graduate Students

17/30000 character limit.

If from within the department, will students be taking this course in addition to or in place of other courses?

This is an elective course. They will be taking this course to satisfy the elective requirements.

98/30000 character limit.

If from outside the department, which courses in other departments would most likely be affected?)

None

4/30000 character limit.

Other comments:

None

4/30000 character limit.

What is the date that this new course was approved by departmental or program faculty? (MM/DD/YYYY) 12/01/2020

Current Status:

Dean Review

Proposal Progress:

03/10/2021 - Submitted by Department Head (Ajay Katangur)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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Computer Science 630: Introduction to Data Science

Instructor: TBD **Office:** CHEK 203 **Phone:** TBD **Email:**

Class meeting times: TBA

Course Description: An introduction to software and techniques used in data science. Topics will include sources of data, data preparation, data analysis, use of software tools, development of data analysis software, and ethical and legal considerations.

Course Pre-requisites: Admission to a CSC graduate program or Permission

Required Text: *How to Think Like a Data Scientist.*, Miller, et al.,
https://runestone.academy/runestone/books/published/httlads/index.html.

EDUCATIONAL OUTCOMES

1. Students will understand the interdisciplinary nature of data science
2. Students will be able to formulate questions that can be answered through data analysis
3. Students will be able to find and select appropriate data sets, where available
4. Students will be able to design and implement data analysis software
5. Students will understand ethical and legal issues in collection and use of data

MAJOR TOPICS

1. Sources of data
2. Python ecosystem for data science
3. Visualizing data
4. Preparing data for analysis
5. Dealing with missing data
6. Programming for data analysis
7. Ethical and legal considerations

ASSIGNMENTS

1. Write programs to analyze data
2. Read research literature and write summary reports
3. Group project and presentation

EVALUATION

1.	Homework	40%	**3.**	In-class quizzes and exercises	10%
2.	Tests (midterm and final)	30%	**4.**	Group project and presentation	20%

This class will not use +/- grading: your grade will be A, B, C, D, or F
Assignments must be turned in by the due date; late work will not be accepted

Missouri State

Curricular Action Workflow

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New Course Proposal Form

Submitted on 03/10/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

***All fields require input**

- (●) New COURSE
- ( ) New REGULAR PERMANENT SECTION of an existing variable content course. If a new regular section of an existing variable topics course, enter the existing course number below

Course Code: CSC

Course Number: (Check Availability) 737

Course Title: Deep Learning

Will this course become part of a program? (●) No ( ) Yes (A corresponding program change form must be submitted)

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Prerequisite/Co-requisite or enter 'None': None

Catalog Course Description: (Include any Pass/Not Pass grading restrictions, repeatable limits, limitation on course applicability,

UG/GR parallel course, etc.)

A study of neural networks, including backpropagation, loss functions, gradient descent, convolutional neural networks, recurrent neural networks, regularization techniques, network architectures, transfer learning, generative models.

234/30000 character limit.

Credit Hours: 3 Lecture Contact Hours: 3 Lab Contact Hours: 0

Note: If variable credit, enter the highest number and add to end of course description. (e.g. "Variable credit, may be taken 1-3 hours.")

Periodicity. Check all that apply.

- [ ] Fall
- [ ] Fall (even-numbered years only)
- [ ] Fall (odd-numbered years only)
- [ ] Spring
- [ ] Spring (even-numbered years only)
- [ ] Spring (odd-numbered years only)
- [ ] Summer
- [x] On Demand only

Complete Catalog Description:
CSC 737 Deep Learning
Prerequisite: None
A study of neural networks, including backpropagation, loss functions, gradient descent, convolutional neural networks, recurrent neural networks, regularization techniques, network architectures, transfer learning, generative models.
Credit hours: 3 Lecture contact hours: 3 Lab contact hours: 0
Typically offered: On Demand only

Include sample syllabus (list topics, course goals.) Use text box OR upload only file types of PDF, DOC or DOCX.

0/30000 character limit.
Attached View Attachment

Purpose of Course

Elective course for students.

29/30000 character limit.

Relationship to Other Departments

None

4/30000 character limit.

Is there a graduate/undergraduate parallel course to this one? ◉ No ○ Yes

Enter parallel course number

nullnull null

How do these classes differ?

0/30000 character limit.

New Course Resource Information

Anticipated Average Enrollment per section:	30	Maximum Enrollment Limit per section:	35
Anticipated Average Enrollment per semester:	30	Maximum Enrollment Limit per semester:	35
Anticipated Average Enrollment per year:	30	Maximum Enrollment Limit per year:	35
Faculty Load Assignment (equated hours):	3		

Is another course being deleted? ◉ No ○ Yes

Select course number and title being deleted.

nullnull null

What will this course require in the way of:

Additional library Holdings

None

4/30000 character limit.

Additional computer resources

None

4/30000 character limit.

Additional or remodeled facilities

None

4/30000 character limit.

Additional equipment or supplies

None

4/30000 character limit.

Additional travel funds

None

4/30000 character limit.

Additional faculty; general vs specialized

None

4/30000 character limit.

Additional faculty; regular vs per-course

None

4/30000 character limit.

Other additional expenses

None

4/30000 character limit.

If additional faculty are not required, how will faculty be made available to teach this course?

We are making a new hire in Fall 2021 which enables us to cover this course without any additional faculty.

107/30000 character limit.

List names of current faculty qualified and available to teach this course

Jamil Saquer
Siming Liu
Mohammed Belkhouche

43/30000 character limit.

What is the anticipated source of students for this course?

Graduate Students

17/30000 character limit.

If from within the department, will students be taking this course in addition to or in place of other courses?

This is an elective course. They will be taking this course to satisfy the elective requirements.

98/30000 character limit.

If from outside the department, which courses in other departments would most likely be affected?)

None

4/30000 character limit.

Other comments:

None

4/30000 character limit.

What is the date that this new course was approved by departmental or program faculty? (MM/DD/YYYY) 12/01/2020

Current Status:

Dean Review

Proposal Progress:

03/10/2021 - Submitted by Department Head (Ajay Katangur)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

Copy As New Proposal

CSC 737: Deep Learning

INSTRUCTOR CONTACT INFORMATION:

Instructor Name: Dr. Mohammed Y. Belkhouche
Office: Cheek Hall 303
Email: YassineBelkhouche@missouristate.edu
Phone: (417) 836-5789
Office Hours: MW 1:00-2:30, T 1:00-3:00
Office Location: Virtual office hours via Zoom. I will provide a link.
Communication Expectations: MSU e-mail, blackboard and zoom.

STUDENT SUCCESS:

At Missouri State University we are committed to student success. A key element to your success as a student is to engage in all course activities and to communicate with your instructor. If you anticipate or experience academic barriers during the course, contact your me right away so we can discuss options.

COURSE DESCRIPTION:

Catalog Description:

A study of neural networks, including backpropagation, loss functions, gradient descent, convolutional neural networks, recurrent neural networks, regularization techniques, network architectures, transfer learning, generative models.

COURSE OBJECTIVES:

Upon completion of this course, students will:

- Become familiar with deep learning frameworks and libraries.
- Be able to implement deep learning algorithms to solve real-world problems.
- Understand image convolution.
- Be able to apply and understand different methods of regularization (i.e., dropout, L2 regularization, data augmentation, batch normalization, etc.).
- Understand the mathematics and effects of optimization parameters (i.e., weight decay, number of epochs, learning rate, momentum, batch size, etc.)

COURSE MATERIALS:

Required Textbook:
None.
Optional Textbook(s) or Other References

- Deep Learning, Ian Goodfellow, Yoshua Bengio, Aaron Courville, ISBN 978-0262035613, 2016
- Deep Learning with Python 1st Edition, François Chollet, ISBN: 978-1617294433, 2017

TECHNOLOGY:

The use of technology is a part of our everyday lives at the university and there is important information you should know about your own computer's capabilities, Internet access, Blackboard, and other technology tools whether you are participating in a classroom on campus or taking an online class.

Computer Requirements:
For information on the basic computer requirements to be successful in class visit the Knowledge Base for Computer Requirements on the Missouri State University website.

Blackboard Ally
To help ensure you have access to your digital learning materials in formats that work for your different devices, learning needs, and preferences, Blackboard includes a new tool called Ally. Next to your course files, you'll find an icon for a dropdown menu. Simply click the icon and select "Alternative Formats." You'll see a list of options from which to choose. Download speed will depend on the size file.
Depending on the type of document, you many find some or all of the options below available:

- An OCRed PDF which is used to improve the text of scanned documents
- A Tagged PDF with improved navigation, especially if you use a screen reader
- An HTML version that will be adjust text for your mobile devices
- An ePub version if you use an eReader or tablet
- An Electronic Braille version if you're a braille reader
- An audio version for listening to an MP3

Explore the Accessibility website to learn about ways we are working to improve accessibility at MSU.

Respondus Lockdown Browser & Monitor:
Test integrity and security is of the utmost importance at Missouri State University. This course requires the use of Respondus LockDown Browser and Monitor for online exams. Monitor requires the use of a webcam. It is recommended that the webcam be the type that plugs in with a USB cable, not built-in to the monitor. Watch this **short video** to get a basic understanding of LockDown Browser and Monitor features.

Then **download and install LockDown Browser.** (Please note that the Lockdown Browser is not currently compatible with Chromebooks.)
When taking an online exam that requires LockDown Browser and a webcam, remember the following guidelines:

- Ensure you're in a location where you won't be interrupted
- **Do not take an online exam in a public setting**. This includes the Open Computer Labs. The Monitor webcam feature will note peripheral activities such as students walking by or other students' voices and "flag" your test attempt for suspicious activity.
- Turn off all other devices (e.g. tablets, phones, second computers) and place them outside of your reach
- Clear your desk of all external materials not permitted - books, papers, other devices
- Before starting the test, know how much time is available for it, and that you've allotted sufficient time to complete it
- Remain at your computer for the duration of the test
- If the computer or networking environment is different than what was used previously with the Webcam Check and System & Network Check in LockDown Browser, run the checks again prior to starting the test
- To produce a good webcam video, do the following:
    - Avoid wearing baseball caps or hats with brims
    - Ensure your computer or tablet is on a firm surface (a desk or table). Do NOT have the computer on your lap, a bed, or other surface where the device (or you) are likely to move
    - If using a built-in webcam, avoid tilting the screen after the webcam setup is complete
    - Take the exam in a well-lit room and avoid backlighting, such as sitting with your back to a window

Remember that LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted.

COURSE REQUIREMENTS AND GRADING

ACTIVITY	% of FINAL GRADE
Exam 1	15
Exam 2	15
Exam 3	15
Homework assignments	25
Group project	20
Quizzes	10

Grading scale: A: 90-100, A-: 87-89, B+: 84-86, B: 80-83, B-:77-79, C+: 74-76, C:70-73, C-: 67-69 D+: 64-66, D:60-63, and F:0-59.

COURSE CONTENT/ ATTEMPED SCHEDULE

DATE	TOPIC	CHAPTER(S)	ASSIGMENTS
Week 1	Introduction and motivations		
Week 2	Applied Mathematics and Machine Learning Basics		HW1
Week 3	Applied Mathematics and Machine Learning Basics		
Week 4	Perceptron		HW2
Week 5	Multilayer Perceptrons		
Exam 1: Friday, September 25, 2020			
Week 6	Multilayer Perceptrons		HW3
Week 7	Convolutional Neural Networks		
Week 8	Convolutional Neural Networks		
Week 9	Convolutional Neural Networks		HW4
Week 10	Recurrent Neural Networks		
Exam 2: Friday, October 23, 2020			
Week 11	Recurrent Neural Networks		
Week 12	Recurrent Neural Networks		HW5
Week 13	Optimization Algorithms		
Week 14	Optimization Algorithms		
Week 15	Applications		HW6
Week 16	Applications		
Final Exam on Wednesday, December 9, 11:00 am to 1:00 pm			

Important Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the student Learning Outcomes described in the course objectives section

COURSE ASSIGNMENT DESCRIPTIONS:

Quizzes: Approximately 3-5 quizzes (dropping one or two). Each quiz is about 10 minutes. All quizzes will be on blackboard.

Exams: There will be three exams. All exams will be online using blackboard. The first exam will be given on September 25, 2020, the second exam will be given on October 23, 2020 during the scheduled class time, and the final exam will be given on December 09, 2020 from 11:00 AM – 01:00 PM.

Homework Assignments: Approximately 5-8 homework assignments will be given.

Group Project: Details about the project will be provided during the semester.

COURSE SPECIFIC POLICIES:

Participation/Attendance:
You must attend classes. While missing a class will not directly affect the grade, you are responsible for any materials covered or handed out or announcements made for the tests and assignments in your absence. Records of your attendance will be maintained. You are also required to participate in class activities and discussions.

MISSING CLASS IF YOU ARE SICK:
While missing class is usually not advisable, it is important to stay home when sick to avoid the spread of communicable illness. If you are sick or not feeling well, please do not come to class but rather seek medical attention from your doctor or at Mager's Health and Wellness Center. They can provide you a medical excuse and advise you when it is safe to return to class. Let me know that you are sick and will not be in class. We will make a plan that allows you to keep up with readings and assignments through the Blackboard course site. If a student is quarantined, the student is required to view the recorded lectures and complete the assignments. If a student is sick for a long period of time and is not able to complete the missing assignments and exams before the grades are due, the student will be given an incomplete grad, the time given to complete the missing work will be no longer than the missed class time. This grad will be changed when the student completes required work.

LATE WORK AND MAKE-UP EXAMS
There is a penalty for late submissions. Late assignments will be counted 20% off for each day after the due time. 100% penalty (i.e. no credit) if submitted after 5 days. If you have not completed your assignment by the due date, you should submit the work you have done for partial credit. No work will be accepted once the graded work has been returned or the solution has been disclosed to the class, except for unusual circumstances which the instructor feels reasonable. If you cannot attend the class to take the exam due to some emergency or some unavoidable situation (such as serious illness, death in the family, participation in university sports, religious observations, and so on) you must notify me as soon as possible before the exam and also you must validate your absence by providing me a document (e.g., with a letter from your doctor). Once your cause is validated a make-up exam will be given.

LAPTOP USE
Laptops, Tablets can be used only for class related activities.

FOOD IN CLASS
No food in the classrooms or labs.

MISSED EXAMS
In the event, if you cannot attend the class to take the exam due to some emergency or some unavoidable situation (such as serious illness, death in the family, participation in university

sports, religious observations, and so on) you must notify me as soon as possible before the exam and also you must validate your absence by providing me a document (e.g., with a letter from your doctor). Once your cause is validated a make-up exam will be given.

COURSE PLAN FOR THE UNEXPECTED:

The COVID-19 Stay-at-Home orders we experienced during Spring 2020 reinforced the need to plan for the unexpected. In our area we can experience inclement weather and influenza outbreaks that could prevent us from meeting on campus. Below is how we will communicate and continue our work in this course should the unexpected occur.

Considerations:	**Plan for Continuing Class:**
How will our class meet?	We will use zoom.
How will I meet with my Instructor?	*I will be available during my virtual office hours. If the time for the office hours does not work for you, send me a request via email, and I will provide a convenient meeting time.*
How will instruction be delivered?	*The lectures will be delivered synchronously via zoom. Blackboard will be used for other activities.*
How often do I need to go to the online course?	*You are expected to participate in the online activities for as long as we are unable to meet on campus. This may be one day if we experience an ice storm or it may be several weeks if we experience something like COVID-19. You are expected to go to the course site every day(blackboard). I will send Announcement emails throughout the entire time we are not meeting on campus.*
Is it possible to receive course announcements as a text?	*If you are using the Blackboard app, you can have announcements sent to you as a text message using the instructions in this step-by-step guide.*
How will I turn in homework?	*Homework and other assignments will be turned in using the Assignment Link in Blackboard. The instructions for how to submit will be included in the assignment instructions.*
What about exams?	*Quizzes and exams will be taken through Blackboard.*
How will I know what grade I received on an assignment or test?	*You can view grades and feedback in My Grades.*

UNIVERSITY POLICIES:

Accessibility/Academic Accommodation:
If you are a student with a disability and anticipate barriers related to this course, it is important to request accommodations and establish an accommodation plan with the University. Please contact the Disability Resource Center (DRC) at the **Disability Resource Center website**, Meyer Library, Suite 111, 417-836-4192, to initiate the process to establish your accommodation plan. The DRC will work with you to establish your accommodation plan, or it may refer you to other appropriate resources based on the nature of your disability. In order to prepare an accommodation plan, the University usually requires that students provide documentation relating to their disability. Please be prepared to provide such documentation if requested. Once a University accommodation plan is established, you may notify the class instructor of approved accommodations. If you wish to utilize your accommodation plan, it is suggested that you do so in a timely manner, preferably within the first two weeks of class. Early notification to the instructor allows for full benefit of the accommodations identified in the plan. Instructors will not receive the accommodation plan until you provide that plan and are not required to apply accommodations retroactively.

Mask and Face Covering Policy
In accord with the MSU Mask and Face Covering policy, Greene County Health Department and the Springfield City Ordinance, masks or face coverings must be worn at all times during a traditional (seated) class. This measure is being implemented to reduce COVID-19 related health risks for everyone engaged in the educational process. Masks or face coverings must be worn over the nose and mouth, in accordance with the Centers for Disease Control and Prevention (CDC) guidelines. Face shields are not considered masks or face coverings for purposes of this requirement.
Students who cannot wear a mask or face covering due to a disability must contact the Disability Resource Center (DRC) to initiate the interactive accommodation process.
In the absence of an approved accommodation, a student's refusal to wear a mask or face covering will be considered a classroom disruption, consistent with *Op3.04-11 Class Disruption*, and may result in the student being administratively dropped from the class section.

Dropping a Class
It is your responsibility to understand the University's procedure for dropping a class. If you stop attending this class but do not follow proper procedure for dropping the class, you will receive a failing grade and will also be financially obligated to pay for the class. For information about dropping a class or withdrawing from the university, contact the Office of the Registrar at 836-5520. You can access the Academic Calendar on the MSU website to view drop and refund deadlines for the semester.

Academic Integrity Policy:
Missouri State University is a community of scholars committed to developing educated persons who accept the responsibility to practice personal and academic integrity. You are responsible for knowing and following the university's academic integrity policy plus additional more-specific

policies for each class. The university policy, formally known as the "Student Academic Integrity Policies and Procedures" is available online at Academic Integrity Policies and Procedures (Students) and also at the Reserves Desk in Meyer Library.

Examples of academic integrity violations include; allowing someone else to copy or use your assignments or exams, turning in papers used in other courses or from the internet, and/or using notes or your book for a closed-book exam. Plagiarism means presenting someone else's work as your own (e.g., copying or paraphrasing someone else's work without appropriate citations). Any student participating in any form of academic dishonesty will be subject to sanctions as described in this policy.

Nondiscrimination Policy:
Missouri State University is an equal opportunity/affirmative action institution and maintains a grievance procedure available to any person who believes he or she has been discriminated against. At all times, it is your right to address inquiries or concerns about possible discrimination to the Office for Institutional Equity and Compliance, Park Central Office Building, 117 Park Central Square, Suite 111, (417) 836-4252. Other types of concerns (i.e., concerns of an academic nature) should be discussed directly with your instructor and can be brought to the attention of your instructor's Department Head. Please visit the OEC (Office for institutional Equity and Compliance for additional information.

Emergency Response:
At the first-class meeting, students should become familiar with a basic emergency response plan through a dialogue with the instructor that includes a review and awareness of exits specific to the classroom and the location of evacuation centers for the building. All instructors are provided this information specific to their classroom and/or lab assignments in an e-mail prior to the beginning of the fall semester from the Office of the Provost and Safety and Transportation. Students with disabilities impacting mobility should discuss the approved accommodations for emergency situations and additional options when applicable with the instructor. For more information, visit Safety and Transportation.

Religious Accommodation:
The University may provide a reasonable accommodation based on a person's sincerely held religious belief. In making this determination, the University reviews a variety of factors, including whether the accommodation would create an undue hardship. The accommodation request imposes responsibilities and obligations on both the individual requesting the accommodation and the University. Students who expect to miss classes, examinations, or other assignments as a consequence of their sincerely held religious belief shall be provided with a reasonable alternative opportunity to complete such academic responsibilities. It is the obligation of students to provide faculty with reasonable notice of the dates of religious observances on which they will be absent by submitting a Request for Religious Accommodation Form to the instructor by the end of the third week of a full semester course or the end of the second week of a half semester course.

Mental Health & Stress Management:
As a student you may experience a range of personal issues that can impede learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. Learn Visit the Missouri State University Counseling Center website to learn more about free and confidential services available to assist you.

Title IX:
Missouri State University has a Title IX policy that guides our response to instances of sexual violence. Sexual Violence includes: Rape, Sexual Assault, Sexual Misconduct, Sexual Discrimination, Domestic Violence, Dating Violence, Stalking, Sexual Harassment and Pregnancy issues. The Title IX policy can be located on the MSU Title IX website. This website is also a good resource for any questions or issues involving Title IX and contains contact information for the MSU Title IX Office and staff. Read an overview of the Title IX office.

If an MSU student discloses a Title IX related issue to a MSU faculty or staff member who is deemed to be a "Responsible Employee" under the policy, that faculty or staff member is required to report such disclosure to the Title IX Coordinator. A responsible employee includes any employee who has the authority to take action to redress sexual violence; who has been given the duty of reporting incidents of sexual violence or any other misconduct by students to the Title IX Coordinator or other appropriate school designee; or whom a student could reasonably believe has the authority or duty to take action. Taylor Health employees and MSU Counseling Center Clinicians are not considered to be Responsible Employees under the policy, and therefore, are not required to report Title IX issues to the Title IX Coordinator.

Cell Phone Policy:
As a member of the learning community, each student has a responsibility to other students who are members of the community. When cell phones or pagers ring and students respond in class or leave class to respond, it disrupts the class. Therefore, the Office of the Provost prohibits the use by students of cell phones, pagers, PDAs, or similar communication devices during scheduled classes. All such devices must be turned off or put in a silent (vibrate) mode and ordinarily should not be taken out during class. Given the fact that these same communication devices are an integral part of the University's emergency notification system, an exception to this policy would occur when numerous devices activate simultaneously. When this occurs, students may consult their devices to determine if a university emergency exists. If that is not the case, the devices should be immediately returned to silent mode and put away. Other exceptions to this policy may be granted at the discretion of the instructor.

Audio/Video Recording of Course Activity:
Students who wish to record lectures or class activities for study purposes should inform the faculty member first. Distribution or sale of recordings or other course materials is prohibited without the written permission of the instructor and other students who are recorded. Distribution without permission is a violation of copyright law and the Code of Student Rights and Responsibilities (Sections 4.6, 4.8, 4.9).

Chosen Name Policy:
A student may choose a name other than their legal name to identify themselves at Missouri State University. A chosen name is different than the student's legal name. Refer to the Chosen Name policy for more information. Students can provide their chosen first and middle names in the *Profile* tab of My Missouri State.

Disclaimer & Fair Use Statement:
This course may contain copyrighted material, the use of which may not have been specifically authorized by the copyright owner. This material is available in an effort to explain issues relevant to the course or to illustrate the use and benefits of an educational tool. The material contained in this course is distributed without profit for research and educational purposes. Only small portions of the original work are being used and those could not be used easily to duplicate the original work. This should constitute a 'fair use' of any such copyrighted material (referenced and provided for in section 107 of the US Copyright Law).

If you wish to use any copyrighted material from this course for purposes of your own that go beyond 'fair use', you must obtain expressed permission from the copyright owner.

Missouri State

Curricular Action Workflow

designed by Computer Ser

New Course Proposal Form

Submitted on 03/10/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

***All fields require input**

- (●) New COURSE
- ( ) New REGULAR PERMANENT SECTION of an existing variable content course. If a new regular section of an existing variable topics course, enter the existing course number below

Course Code: CSC

Course Number: (Check Availability) 755

Course Title: Software Testing and Quality Assurance

Will this course become part of a program? (●) No ( ) Yes (A corresponding program change form must be submitted)

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Prerequisite/Co-requisite or enter 'None': None

Catalog Course Description: (Include any Pass/Not Pass grading restrictions, repeatable limits, limitation on course applicability,

UG/GR parallel course, etc.)

Various topics in software testing and quality assurance concepts will be covered including inspections and reviews, validation and verification, testing techniques, and related tools. Selective software project planning steps, cost estimation, productivity metrics, as well as release and configuration management concepts will be also covered. Cannot receive credit for both CSC 455 and CSC 755.

397/30000 character limit.

Credit Hours: 3 Lecture Contact Hours: 3 Lab Contact Hours: 3

Note: If variable credit, enter the highest number and add to end of course description. (e.g. "Variable credit, may be taken 1-3 hours.")

Periodicity. Check all that apply.

- [ ] Fall
- [ ] Fall (even-numbered years only)
- [ ] Fall (odd-numbered years only)
- [ ] Spring
- [ ] Spring (even-numbered years only)
- [ ] Spring (odd-numbered years only)
- [ ] Summer
- [x] On Demand only

Complete Catalog Description:
CSC 755 Software Testing and Quality Assurance
Prerequisite: None
Various topics in software testing and quality assurance concepts will be covered including inspections and reviews, validation and verification, testing techniques, and related tools. Selective software project planning steps, cost estimation, productivity metrics, as well as release and configuration management concepts will be also covered. Cannot receive credit for both CSC 455 and CSC 755.
Credit hours: 3 Lecture contact hours: 3 Lab contact hours: 3
Typically offered: On Demand only

Include sample syllabus (list topics, course goals.) Use text box OR upload only file types of PDF, DOC or DOCX.

0/30000 character limit.
Attached View Attachment

Purpose of Course

Elective course for students.

29/30000 character limit.

Relationship to Other Departments

None

4/30000 character limit.

Is there a graduate/undergraduate parallel course to this one? ◉ No ○ Yes

Enter parallel course number

nullnull null

How do these classes differ?

0/30000 character limit.

New Course Resource Information

Anticipated Average Enrollment per section:	30	Maximum Enrollment Limit per section:	35
Anticipated Average Enrollment per semester:	30	Maximum Enrollment Limit per semester:	35
Anticipated Average Enrollment per year:	30	Maximum Enrollment Limit per year:	35
Faculty Load Assignment (equated hours):	3		

Is another course being deleted? ◉ No ○ Yes

Select course number and title being deleted.

nullnull null

What will this course require in the way of:

Additional library Holdings

None

4/30000 character limit.

Additional computer resources

None

4/30000 character limit.

Additional or remodeled facilities

None

4/30000 character limit.

Additional equipment or supplies

None

4/30000 character limit.

Additional travel funds

None

4/30000 character limit.

Additional faculty; general vs specialized

None

4/30000 character limit.

Additional faculty; regular vs per-course

None

4/30000 character limit.

Other additional expenses

None

4/30000 character limit.

If additional faculty are not required, how will faculty be made available to teach this course?

We are making a new hire in Fall 2021 which enables us to cover this course without any additional faculty.

107/30000 character limit.

List names of current faculty qualified and available to teach this course

Razib Iqbal
Mohammed Belkhouche

31/30000 character limit.

What is the anticipated source of students for this course?

Graduate Students

17/30000 character limit.

If from within the department, will students be taking this course in addition to or in place of other courses?

This is an elective course. Students will be taking this course to satisfy the elective requirements.

102/30000 character limit.

If from outside the department, which courses in other departments would most likely be affected?)

None

4/30000 character limit.

Other comments:

None

4/30000 character limit.

What is the date that this new course was approved by departmental or program faculty? (MM/DD/YYYY) 12/01/2020

Current Status:

Dean Review

Proposal Progress:

03/11/2021 - Submitted by Department Head (Ajay Katangur)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

Copy As New Proposal

CSC 755 (Software Testing and Quality Assurance): Spring 2020 Syllabus

Tuesdays & Thursdays @ CHEEK Hall 151, 1400–1515

Instructor: **Dr. Razib Iqbal**
Office: Cheek Hall 211A**,** Email: riqbal@missouristate.edu, Web: www.razib.info
Office Hours: Tuesdays 10am-12pm, 3:30-4:30pm; Thursdays 11am-12pm; 3:30-4:30pm

Course Topics: Various topics in software testing and quality assurance concepts will be covered including inspections and reviews, validation and verification, testing techniques, and related tools. Selective software project planning steps, cost estimation, productivity metrics, as well as release and configuration management concepts will be also covered.

Course Objective: Upon completion of this course, students will have the ability to plan and manage small to medium software development projects, conduct effective and efficient inspections, design and implement comprehensive test plans, apply appropriate testing techniques, ensure test coverage and yield, and assess a software process to evaluate how effective it is at promoting overall software quality within a given scope, cost and time. Also, students will get familiarized with latest testing tools and research trends in Software Quality Assurance.

Reference books:

- Software Testing and Quality Assurance: Theory and Practice, Naik & Tripathy, ISBN: 978-0-471-78911-6, 2008
- Software Engineering: A Practitioner's Approach, Pressman & Maxim, ISBN: 0078022126, 2015

Course Work and Evaluation:

Activities		Grading Scale (Based on weighted average)	
		93%	A
		90%	A-
Midterm Exam	15%	87%	B+
Final Exam (Non-comprehensive)	15%	84%	B
		80%	B-
Lecture Presentation	20%	77%	C+
Research Project	30%	74%	C
		70%	C-
Assignment & Misc.	20%	65%	D+
		60%	D
		<60%	F

Lecture Presentation and Research Project: Students will investigate a white-box/black-box testing tool and present it to the class in a lab setting. Students will also pursue a literature survey on one of the selected topics (to be) posted in the Blackboard, and propose enhancements with supportive results/comparisons on that particular topic/technique. There will be multiple checkpoints throughout the semester. Details on these checkpoints will be discussed in the class and duly posted in Blackboard.

Course Policy:

1. Unless otherwise instructed, submit your deliverables in **Blackboard**. Email/paper submissions will receive zero credit. Contact the instructor if your file size is more than 50MB.
2. Instructor will use Missouri State University **official email** to communicate with the students outside the class times. Students must check their MSU emails (including clutter and junk folders) daily.
3. Instructor may, at his sole discretion, award partial credit (not exceeding 80% of the total) for activity submissions that are near completion and have been properly submitted at least once in Blackboard. In case of multiple submissions, only the latest submission will be taken into consideration.
4. There will be **no make-up** exam, and late submission of assignment/project will receive zero credit unless there is a situation beyond a team/student's control. Shopping, sleeping, hunting, family get-togethers, unavailability of resources etc. are not good excuses – please plan suitably.

5. Notify the instructor at least **48 hours** before any planned/anticipated absences (e.g. job interview, a special medical appointment or travelling on University business). Official document or satisfactory evidence is required for justifications.
6. For any team activities, an individual student will not receive the team score automatically unless the student made significant contributions to that activity.
7. A student will automatically **fail** this course if unable to secure at least **50%** marks separately in Midterm and Final exams. Grades will not be curved. However, instructor reserves the right to exclude any activity from the final grade calculation for the entire class. Instructor may, at his sole discretion, award bonus points to outstanding submissions.

Tentative semester plan:

		Tuesday	Thursday
Week 01	13-Jan	Syllabus/Coverage	QA Importance
Week 02	20-Jan	Software Reviews	Debugging
Week 03	27-Jan	JAVA	Testing Strategies
Week 04	3-Feb	Unit Testing	WB Testing
Week 05	10-Feb	JUnit Testing	WB Testing
Week 06	17-Feb	Mutation Testing	*Team Work*
Week 07	24-Feb	*Student WB Lecture*	*Student WB Lecture*
Week 08	2-Mar	*Project CP-1*	Mid Term Exam
Week 09	9-Mar	Blackbox Testing	Blackbox Testing
Week 10	16-Mar		
Week 11	23-Mar	Blackbox Testing	Blackbox Testing
Week 12	30-Mar	Blackbox Testing	*Project CP-2*
Week 13	6-Apr	*Student BB Lecture*	*Student BB Lecture*
Week 14	13-Apr	Project Management	Project Management
Week 15	20-Apr	Project Management	
Week 16	27-Apr	Project Management	Project Management
Week 17	4-May	Final Exam	*Final Project Submission*
Week 18	11-May		Final Project Presentation
Note: Final Presentation will take place during the official final exam time			

Audio/video recording and course contents distribution: Students who wish to record lectures or class activities for study purposes should inform the faculty member first. Distribution or sale of recordings or other course materials (e.g. lecture slides, exams, assignments, solutions, passwords) is prohibited without the written permission of the instructor and other students who are recorded. Distribution without permission is a violation of copyright law and the Code of Student Rights and Responsibilities (Sections 4.6, 4.8, 4.9).

Academic Integrity: Missouri State University is a community of scholars committed to developing educated persons who accept the responsibility to practice personal and academic integrity. You are responsible for knowing and following the University's academic integrity policy plus additional more-specific policies for each class. The University policy, formally known as the "Student Academic Integrity Policies and Procedures" is available online at http://www.missouristate.edu/policy/Op3_01_AcademicIntegrityStudents.htm and also at the Reserves Desk in Meyer Library. Any student participating in any form of academic dishonesty will be subject to sanctions as described in this policy.

Electronic devices: Students are encouraged to bring their own laptop/tablet for note taking. However, if the presence of an electronic device becomes a source of distraction then the instructor reserves the right to require the owner to turn off that device. The Office of the Provost prohibits the use by students of cell phones, pagers, PDAs, or similar communication devices during scheduled classes. All such devices must be turned off or put in a silent (vibrate) mode and ordinarily should not be taken out during class. Given the fact that these same communication devices are an integral part of the University's emergency notification system, an exception to this policy would occur when numerous devices activate simultaneously. When this occurs, students may consult their devices to determine if

a university emergency exists. If that is not the case, the devices should be immediately returned to silent mode and put away.

Disability Accommodations: If you are a student with a disability and anticipate barriers related to this course, it is important to request accommodations and establish an accommodation plan with the University. Please contact the Disability Resource Center (DRC) (https://www.missouristate.edu/disability/), Meyer Library, Suite 111, 417-836-4192, to initiate the process to establish your accommodation plan. The DRC will work with you to establish your accommodation plan, or it may refer you to other appropriate resources based on the nature of your disability. In order to prepare an accommodation plan, the University usually requires that students provide documentation relating to their disability. Please be prepared to provide such documentation if requested. Once a University accommodation plan is established, you may notify the class instructor of approved accommodations. If you wish to utilize your accommodation plan, it is suggested that you do so in a timely manner, preferably within the first two weeks of class. Early notification to the instructor allows for full benefit of the accommodations identified in the plan. Instructors will not receive the accommodation plan until you provide that plan, and are not required to apply accommodations retroactively.

Emergency Response: Students with disabilities impacting mobility should discuss the approved accommodations for emergency situations and additional options when applicable with the instructor. For more information see the Emergency Quick Reference and the Emergency Response Plan.

- **Cheek Hall Shelter Information -** In case of severe weather or other conditions requiring shelter, evacuate floors 1, 2, and 3 using the center, north, and west stairs, and take shelter in the basement interior hallway.
- **Cheek Hall Evacuation Information -** If the building must be evacuated for any reason, such as a fire, head west to the Siceluff first-floor classrooms and lobby; if those areas are full, go to the lower level of Plaster Student Union.

Nondiscrimination: Missouri State University is an equal opportunity/affirmative action institution, and maintains a grievance procedure available to any person who believes he or she has been discriminated against. At all times, it is your right to address inquiries or concerns about possible discrimination to the Office for Institutional Equity and Compliance, Park Central Office Building, 117 Park Central Square, Suite 111, 417-836-4252. Other types of concerns (i.e., concerns of an academic nature) should be discussed directly with your instructor and can also be brought to the attention of your instructor's Department Head. Please visit the OED website at www.missouristate.edu/equity/.

Missouri State

Curricular Action Workflow

designed by Computer Ser

Change Program Proposal Form

Submitted on 03/09/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

Department:

Computer Science

Type of Program

Choose One:

- (●) Non-Comprehensive Undergraduate Major
- ( ) Comprehensive Undergraduate Major
- ( ) Graduate Program
- ( ) Option
- ( ) Minor
- ( ) Certificate

Does this program include any new courses?

(●) No ( ) Yes (A corresponding new course form must be submitted to create each new course.)

Title of Program Affected:

Computer Science/Computer Science-BS

Current Catalog Description: *(Either cut and paste present description from online catalog **OR** provide as an attachment below)*

Computer Science
Major(s)
Computer Science (Non-Comprehensive)
Bachelor of Science
Major requirements (69-72):
Major core (42 hours):
CSC 130(3), 131(4), 232(4), 244(3), 335(3), 360(3), 365(3), 388(3), 450(4), 482(1), 565(3).
Nine additional hours from CSC 300 and eligible CSC courses numbered higher than 303, with no more than three hours in CSC 399 and no more than three hours in CSC 596. Courses not eligible: CSC 500, 505, and 510.
Public Affairs Capstone Experience will be fulfilled by completion of CSC 335(3), 365(3), and 482(1).
Successful completion of the computer science major field test (MFT) with at least a score of 50th percentile is required.
Minor required or second major. (Note: The "Computer Science" option contains courses that satisfy the requirements for a minor in Mathematics.)

Not Attached

Complete New Catalog Description: *(Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission]* ***OR*** *provide as an attachment below)*

Computer Science
Major(s)
Computer Science (Non-Comprehensive)
Bachelor of Science
Major requirements (69-72):
Major core (42 hours):
CSC 130(3), 131(4), 232(4), 244(3), 335(3), 360(3), 365(3), 388(3), 450(4), 482(1), 565(3).
Nine additional hours from CSC 300 and eligible CSC courses numbered higher than 303, with no more than three hours in CSC 399 and no more than three hours in CSC 596. Courses not eligible: CSC 500, 505, and 510.
Public Affairs Capstone Experience will be fulfilled by completion of CSC 335(3), 365(3), and 482(1).
~~Successful completion of the computer science major field test (MFT) with at least a score of 50th percentile is required.~~**Successful completion of the computer science major field test (MFT) with at least a score of 145 for Computer Sciece-Computer Science option and 140 for Computer Sciece-Software Development option is required.**
Minor required or second major. (Note: The "Computer Science" option contains courses that satisfy the requirements for a minor in Mathematics.)

POWERED BY TINYMCE

Not Attached

Total Hours: 71-73

What is changing? Check all boxes that apply:

- [ ] Title change
- [ ] Adding option to an existing program (major)
- [ ] Deleting option from an existing program (major)
- [ ] Adding existing course(s) totaling 0 credits
- [ ] Adding newly created course(s) totaling 0 credits

(Note: A new course proposal must be submitted for each new course)

- [ ] Deleting courses from the program (major)

(Note: A Delete Course Proposal form must be submitted if deleting course from catalog.)

- [ ] Changing admission requirements
- [x] Other

We are changing the MFT requirement from a percentile score to a number and also a different score for CS-CS and CS-SD options.

Reason for Proposed Change:

Since CS-SD students do not take CSC 325 Algorithms and Advanced Data Structures and CSC 333 Languages and Machines, having a low requirement for these students compared to CS-CS students is fair.

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

01/08/2021

Current Status:

Department Head Review

Proposal Progress:

This proposal is waiting for its first review.

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

Copy As New Proposal

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Missouri State

Curricular Action Workflow

Change Program Proposal Form

Submitted on 03/09/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

Department:

Computer Science

Type of Program

Choose One:

- ○ Non-Comprehensive Undergraduate Major
- ○ Comprehensive Undergraduate Major
- ○ Graduate Program
- ○ Option
- ○ Minor
- ◉ Certificate

Does this program include any new courses?

○ No ◉ Yes (A corresponding new course form must be submitted to create each new course.)

Title of Program Affected:

Data Science-Graduate Certificate

Current Catalog Description: *(Either cut and paste present description from online catalog **OR** provide as an attachment below)*

Program description
The Graduate Certificate in Data Science is a 12-credit hour program designed to provide advanced knowledge and skills in the field of data science, including data analysis, data mining, data visualization, statistical modeling, and feature engineering for machine learning.

Admission requirements
Bachelor's degree and a 2.75 GPA is required
Should have course work equivalent to CSC 232
Course requirements (12 hours)
Course Code Course Title Credit hours
CSC 635 Data Mining 3 hrs
CSC 735 Data Analytics 3 hrs
CSC 742 Evolutionary Computing 3 hrs
MTH 645 Applied Statistics 3 hrs
Completion requirements
Attain a combined course GPA of at least 3.00 in required courses.

Not Attached

Complete New Catalog Description: *(Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission]* ***OR*** *provide as an attachment below)*

Program description
The Graduate Certificate in Data Science is a 12-credit hour program designed to provide advanced knowledge and skills in the field of data science, including data analysis, data mining, data visualization, statistical modeling, and feature engineering for machine learning.
Admission requirements
Bachelor's degree **with GPA of 2.75 or higher** ~~and a 2.75 GPA is required~~
CSC 232 or equivalent ~~Should have course work equivalent to CSC 232~~
Course requirements (12 hours)
Four Courses from:
CSC 630 Introduction to Data Science
CSC 635 Data Mining
CSC 735 Data Analytics
CSC 736 Machine Learning
CSC 737 Deep Learning
MTH 640 Statistical Theory I or MTH 645 Applied Statistics or approved Statistics course
Subject to Departmental approval CSC 612 Advanced Database Systems, or CSC 798 Research in Computer Science, may be substituted for a course in the list above.

~~Course Code Course Title Credit hours~~
~~CSC 635 Data Mining 3 hrs~~
~~CSC 735 Data Analytics 3 hrs~~
~~CSC 742 Evolutionary Computing 3 hrs~~
~~MTH 645 Applied Statistics 3 hrs~~
Completion requirements
Attain a combined course GPA of at least 3.00 in **Data Science certificate** ~~required~~ courses.

POWERED BY TINYMCE

Not Attached

Total Hours: 12

What is changing? Check all boxes that apply:

- [ ] Title change
- [ ] Adding option to an existing program (major)
- [ ] Deleting option from an existing program (major)
- [x] Adding existing course(s) totaling 3 credits
- [x] Adding newly created course(s) totaling 6 credits

(Note: A new course proposal must be submitted for each new course)

- [ ] Deleting courses from the program (major)

(Note: A Delete Course Proposal form must be submitted if deleting course from catalog.)

- [ ] Changing admission requirements
- [x] Other

Adding more course options

Reason for Proposed Change:

This give students the option to chose from several courses to complete the Data Science certificate

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

12/10/2020

Current Status:

Department Head Review

Proposal Progress:

This proposal is waiting for its first review.

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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Missouri State

Curricular Action Workflow

Change Program Proposal Form

Submitted on 03/09/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

Department:

Computer Science

Type of Program

Choose One:

- ○ Non-Comprehensive Undergraduate Major
- ○ Comprehensive Undergraduate Major
- ◉ Graduate Program
- ○ Option
- ○ Minor
- ○ Certificate

Does this program include any new courses?

◉ No ○ Yes (A corresponding new course form must be submitted to create each new course.)

Title of Program Affected:

Computer Science-MS (Accelerated)

Current Catalog Description: *(Either cut and paste present description from online catalog **OR** provide as an attachment below)*

Accelerated Master's
If you know, as an undergraduate, that you want to pursue a graduate degree, you can begin your graduate studies in computer science your senior year.

Am I eligible for the Accelerated Master's Program?
You must be a current Missouri State University, Evangel University or Southwest Baptist (SBU) undergraduate student. (SBU is limited to the Master of Accountancy-Accelerated).
You must be a junior (60+ credit hours already earned).
You must have at least one more full semester as an undergraduate remaining.
Accelerated Admission
To be eligible to apply for admission to this program, an MSU undergraduate student must be pursuing a BS in Computer Science or closely related field such as Math or Physics, have completed CSC 232 and MTH 314, and have a GPA of 3.5 or higher in all courses required for the undergraduate major. An eligible student may apply for admission during the second semester of the junior year.

If accepted into the accelerated program, up to a maximum of 9 hours of 600/700 level CSC courses taken after admission into the program may be given credit for both undergraduate and graduate programs.

A student is fully admitted upon completion of the requirements for the baccalaureate degree. All requirements for the master's program must be met for graduation from the master's program.

Before enrolling in a course to be counted as both undergraduate and graduate credit and to count the course toward the master's degree, an undergraduate student must be accepted into the accelerated program and receive prior approval from the graduate program advisor, department head of the undergraduate program, and the dean of the Graduate college. Acceptance into the program and all approvals must be completed prior to the end of the Change of Schedule Period for the course(s). Contact the Graduate College for further information.

Not Attached

Complete New Catalog Description: *(Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission]* ***OR*** *provide as an attachment below)*

Accelerated Master's
If you know, as an undergraduate, that you want to pursue a graduate degree, you can begin your graduate studies in computer science your senior year.
Am I eligible for the Accelerated Master's Program?
You must be a current Missouri State University, Evangel University or Southwest Baptist (SBU) undergraduate student. (SBU is limited to the Master of Accountancy-Accelerated).
You must be a junior (60+ credit hours already earned).
You must have at least one more full semester as an undergraduate remaining.
Accelerated Admission
To be eligible to apply for admission to this program, an MSU undergraduate student must be pursuing a BS in Computer Science or closely related field such as Math or Physics, have completed CSC 232 and MTH 314, and have a GPA of **3.0** ~~3.5~~ or higher in all courses required for the undergraduate major. An eligible student may apply for admission during the second semester of the junior year.
If accepted into the accelerated program, up to a maximum of 9 hours of 600/700 level CSC courses taken after admission into the program may be given credit for both undergraduate and graduate programs.
A student is fully admitted upon completion of the requirements for the baccalaureate degree. All requirements for the master's program must be met for graduation from the master's program.
Before enrolling in a course to be counted as both undergraduate and graduate credit and to count the course toward the master's degree, an undergraduate student must be accepted into the accelerated program and receive prior approval from the graduate program advisor, department head of the undergraduate program, and the dean of the Graduate college. Acceptance into the program and all approvals must be completed prior to the end of the Change of Schedule Period for the course(s). Contact the Graduate College for further information.

POWERED BY TINYMCE

Not Attached

Total Hours: 30

What is changing? Check all boxes that apply:

- [ ] Title change
- [ ] Adding option to an existing program (major)
- [ ] Deleting option from an existing program (major)
- [ ] Adding existing course(s) totaling 30 credits
- [ ] Adding newly created course(s) totaling 30 credits

(Note: A new course proposal must be submitted for each new course)

- [ ] Deleting courses from the program (major)

(Note: A Delete Course Proposal form must be submitted if deleting course from catalog.)

- [x] Changing admission requirements
- [ ] Other

Reason for Proposed Change:

The minimum GPA for admission to the regular Master's program is 3.0. We are changing the GPA requirement on the accelerated program to be consistent with the admission requirements for the regular Master's program.

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

12/01/2020

Current Status:

Department Head Review

Proposal Progress:

This proposal is waiting for its first review.

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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Curricular Action Workflow

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Change Program Proposal Form

Submitted on 03/10/2021 by Ajay Katangur (AjayKatangur@MissouriState.edu).

Department:

Computer Science

Type of Program

Choose One:

- ○ Non-Comprehensive Undergraduate Major
- ○ Comprehensive Undergraduate Major
- ◉ Graduate Program
- ○ Option
- ○ Minor
- ○ Certificate

Does this program include any new courses?

◉ No ○ Yes (A corresponding new course form must be submitted to create each new course.)

Title of Program Affected:

Computer Science-MS

Current Catalog Description: *(Either cut and paste present description from online catalog **OR** provide as an attachment below)*

Graduate programs
Computer Science
Lloyd Smith, Program Director
Cheek Hall, Room 316, Phone 417-836-4834

computerscience.missouristate.edu

Program description
The Department of Computer Science offers a Master of Science in Computer Science and participates in the Master of Natural and Applied Science (MNAS).

The curriculum of this proposed MS CS degree is focused on modern, applied needs of computation for business and social and personal applications. The curriculum will provide students with a practical, workforce-ready skill set for modern needs. Areas of coursework include algorithms, data mining, software engineering and quality assurance, evolutionary computing, multimedia communications, ubiquitous computing, and Internet of Things. During the first semester, in consultation with an advisor, the student will select courses, projects, and/or research to complete the program.

Entrance requirements
Preference will be given to applicants with an undergraduate degree from an accredited university in Computer Science or closely related field (e.g., Computer Engineering, Math, Electrical Engineering, Software Engineering), including courses equivalent to MSU CSC 232 and MTH 314. Applicants without one of the described undergraduate degrees or courses may be admitted with the stipulation that those undergraduate courses must be completed prior to registration in graduate courses, and that the undergraduate courses will not be credited toward the MS degree.

GPA of at least 3.0 (on a 4.00 scale) for the last 60 semester hours of undergraduate work and a 3.0 overall undergraduate GPA.

Graduate Record Examination (GRE) scores: a combined score of 290 on the verbal and quantitative sections of the Graduate Record Examination.

English language communication: International applicants whose native language is not English and who do not have a U.S. degree are required to take the TOEFL or IELTS. Required score on the TOEFL: A minimum score of 550 on the paper version, 213 on the computer-based, or 79 on the internet-based TOEFL. Required score on the IELTS: A minimum score of 6.0. The English language communication requirement is waived for applicants who meet one of the following: (i) are native English speakers or (ii) have completed a minimum of 60 semester credit hours from an accredited college or university in the U.S.

Admission requirements for the Accelerated Master's option
Completion of 60 or more undergraduate credit hours in a degree program of Computer Science or closely related field such as Math or Physics, and an overall GPA of 3.25 or better.
Completion of CSC 232 and MTH 314 with an overall GPA of 3.25 or better.
Acceptance of the applicant by the graduate faculty in Computer Science under the accelerated masters option.
Accelerated Master's Degree option
Eligible Missouri State University majors in Computer Science may apply for preliminary acceptance into the Master of Science program in Computer Science. If accepted, graduate courses chosen from approved 600 or 700-level courses may be counted toward both the graduate and undergraduate degrees, with a maximum of 9 credit hours counted. This option offers an opportunity for students to complete the course requirements for the Master of Science degree in Computer Science in substantially less time after completion of the Bachelor's

Master of Science degree in Computer Science in substantially less time after completion of the Bachelor's degree. Contact the Department of Computer Science for further information and guidelines.

Before enrolling in a course to be counted as both undergraduate and graduate credit and to count the courses toward the Master's degree, an undergraduate student must be accepted into the accelerated program and complete a mixed credit form. Acceptance into the program and all approvals must be completed prior to the end of the Change of Schedule Period for the course(s). See the "Graduate College" section for further information.

Degree requirements
Program of Study
The program for each candidate will be structured by the candidate's committee or advisor in consultation with the student, and must include at least 30 semester hours of graduate credit from courses numbered 600-799 inclusive.

Required courses
CSC 701(1), CSC 702(2) (3 credit hours)
All students must have either previously completed undergraduate courses equivalent to MSU CSC 325, CSC 335, and CSC 344, or as part of graduate coursework the respective graduate courses CSC 611, CSC 612, and CSC 613. A maximum of 6 credit hours among CSC 611, CSC 612, and CSC 613 may be applied to the MS degree. (If it is necessary to take all three courses, one of the courses will not be applied to the MS degree.) If any of the courses CSC 325, CSC 335, or CSC 344 have previously been taken as undergraduate courses, then their respective graduate equivalents may not be repeated for graduate credit.
Degree option
Complete 27 credit hours of additional courses, such that at least 12 credit hours are at the 700-level; no more than a total of 9 credit hours may be in CSC 796, CSC 798 and CSC 799. Complete at least one of the following degree options. (Note: Up to 6 credit hours of coursework from other departments may be allowed in the degree program if approved by the Computer Science Dept.)

Thesis Option, 30 hours total: Includes 6 credit hours of CSC 799 Thesis.

Project Option, 30 hours total: Includes 3 to 6 credit hours of CSC 798 Research in Computer Science.

Course-only Option, 30 hours total: Incudes no more than 2 credit hours of CSC 798 Research in Computer Science.

Comprehensive examination
A written comprehensive exam is required for students who do not complete a thesis. There are no credit hours associated with the exam.

The examination is taken after most of the course work has been completed, and is written and evaluated by the graduate faculty in Computer Science. The examination may include comprehensive questions in Computer Science and questions specific to the area of study chosen by the student.

Retention requirements

Retention requirements

To remain in the program, a student must maintain a GPA of 3.00 and make satisfactory progress.

Not Attached

Complete New Catalog Description: *(Either provide the revised description in the text area below [strikethrough all deletions and insert/bold new information - any content that is copied and pasted will lose existing formatting; please review prior to submission]* ***OR*** *provide as an attachment below)*

Graduate programs
Computer Science
Lloyd Smith, Program Director
Cheek Hall, Room 316, Phone 417-836-4834
computerscience.missouristate.edu
Program description
The Department of Computer Science offers a Master of Science in Computer Science and participates in the Master of Natural and Applied Science (MNAS).
The curriculum of this proposed MS CS degree is focused on modern, applied needs of computation for business and social and personal applications. The curriculum will provide students with a practical, workforce-ready skill set for modern needs. Areas of coursework include algorithms, data mining, software engineering and quality assurance, evolutionary computing, multimedia communications, ubiquitous computing, and Internet of Things. During the first semester, in consultation with an advisor, the student will select courses, projects, and/or research to complete the program.
Entrance requirements
Preference will be given to applicants with an undergraduate degree from an accredited university in Computer Science or closely related field (e.g., Computer Engineering, Math, Electrical Engineering, Software Engineering), including courses equivalent to MSU CSC 232 and MTH 314. Applicants without one of the described undergraduate degrees or courses may be admitted with the stipulation that those undergraduate courses must be completed prior to registration in graduate courses, and that the undergraduate courses will not be credited toward the MS degree.
GPA of at least 3.0 (on a 4.00 scale) for the last 60 semester hours of undergraduate work and a 3.0 overall undergraduate GPA.
Graduate Record Examination (GRE) scores: a combined score of 290 on the verbal and quantitative sections of the Graduate Record Examination.
English language communication: International applicants whose native language is not English and who do not have a U.S. degree are required to take the TOEFL or IELTS. Required score on the TOEFL: A minimum score of 550 on the paper version, 213 on the computer-based, or 79 on the internet-based TOEFL. Required score on the IELTS: A minimum score of 6.0. The English language communication requirement is waived for applicants who meet one of the following: (i) are native English speakers or (ii) have completed a minimum of 60 semester credit hours from an accredited college or university in the U.S.
Admission requirements for the Accelerated Master's option
Completion of 60 or more undergraduate credit hours in a degree program of Computer Science or closely related field such as Math or Physics, and an overall GPA of ~~3.25~~ **3.00** or better.
Completion of CSC 232 and MTH 314 with an overall GPA of ~~3.25~~ **3.00** or better.
Acceptance of the applicant by the graduate faculty in Computer Science under the accelerated masters option.
Accelerated Master's Degree option
Eligible Missouri State University majors in Computer Science may apply for preliminary acceptance into the Master of Science program in Computer Science. If accepted, graduate courses chosen from approved 600 or 700-level courses may be counted toward both the graduate and undergraduate degrees, with a maximum of 9 credit hours counted. This option offers an opportunity for students to complete the course requirements for the Master of Science degree in Computer Science in substantially less time after completion of the Bachelor’s degree. Contact the Department of Computer Science for further information and guidelines. Before enrolling in a course to be counted as both undergraduate and graduate credit and to count the courses toward the Master’s degree, an undergraduate student must be accepted into the accelerated program and complete a mixed credit form. Acceptance into the program and all approvals must be completed prior to the end of the Change of Schedule Period for the course(s). See the “Graduate College” section for further information.
Degree requirements
Program of Study
The program for each candidate will be structured by the candidate's committee or advisor in consultation with the student, and must include at least 30 semester hours of graduate credit from courses numbered 600-799 inclusive.
Required courses
CSC 701(1), CSC 702(2) (3 credit hours)
All students must have either previously completed undergraduate courses equivalent to MSU CSC 325, CSC 335, and CSC **360**~~344~~, or as part of graduate coursework the respective graduate courses CSC 611, CSC

612, and CSC **660**~~613~~. A maximum of 6 credit hours among CSC 611, CSC 612, and CSC 613 may be applied to the MS degree. (If it is necessary to take all three courses, one of the courses will not be applied to the MS degree.) If any of the courses CSC 325, CSC 335, or CSC **360**~~344~~ have previously been taken as undergraduate courses, then their respective graduate equivalents may not be repeated for graduate credit.
Degree option
Complete 27 credit hours of additional courses, such that at least 12 credit hours are at the 700-level; no more than a total of 9 credit hours may be in CSC 796, CSC 798 and CSC 799. Complete at least one of the following degree options. (Note: Up to 6 credit hours of coursework from other departments may be allowed in the degree program if approved by the Computer Science Dept.)
Thesis Option, 30 hours total: Includes 6 credit hours of CSC 799 Thesis.
Project Option, 30 hours total: Includes 3 to 6 credit hours of CSC 798 Research in Computer Science.
Course-only Option, 30 hours total: Incudes no more than 2 credit hours of CSC 798 Research in Computer Science.
Comprehensive examination
A written comprehensive exam is required for students who do not complete a thesis. There are no credit hours associated with the exam.
The examination is taken after most of the course work has been completed, and is written and evaluated by the graduate faculty in Computer Science. The examination may include comprehensive questions in Computer Science and questions specific to the area of study chosen by the student.
Retention requirements
To remain in the program, a student must maintain a GPA of 3.00 and make satisfactory progress.

POWERED BY TINYMCE

Not Attached

Total Hours: 30

What is changing? Check all boxes that apply:

- [ ] Title change
- [ ] Adding option to an existing program (major)
- [ ] Deleting option from an existing program (major)
- [ ] Adding existing course(s) totaling 0 credits
- [ ] Adding newly created course(s) totaling 0 credits

(Note: A new course proposal must be submitted for each new course)

- [ ] Deleting courses from the program (major)

(Note: A Delete Course Proposal form must be submitted if deleting course from catalog.)

- [ ] Changing admission requirements
- [x] Other

Added CSC 360 in place of CSC 314, and CSC 660 in place of CSC 613
There is also description of accelerated Master's program. We submitted a proposal lowering the GPA to 3.0. That change has also been made here.

Reason for Proposed Change:

CSC 344 and CSC 613 have been replaced by CSC 3600and CSC 660. GPA requirement of 3.0 is the same for all Master's programs in computer science.

What is the date that this new program was approved by departmental or program faculty? (MM/DD/YYYY)

12/01/2020

Current Status:

Dean Review

Proposal Progress:

03/11/2021 - Submitted by Department Head (Ajay Katangur)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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Delete Course Proposal Form

Submitted on 03/04/2021 by William Bray (WBray@MissouriState.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

MTH285 Calculus for Business and the Social Sciences

Is this course a requirement or course choice within any current program, including those outside your department?

- ( ) No
- ( ) Yes (A corresponding program change course form must be submitted to remove the deleted course from the program requirements. You should also notify other departments using this course of your plans to delete the course.)

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Online catalog description.

Prerequisite: "C" or better in MTH 135, or appropriate placement score. Short review of algebra; absolute value and inequalities followed by elements of geometry, limits, the derivative, anti-derivative, and their applications. Cannot receive credit toward graduation for both MTH 285 and MTH 261. 3(3-0) F,S

Reason for proposed Deletion

The course has not been offered in at least 12 years.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [x] Routine or annual review/assessment of curriculum
- [ ] Faculty Input
- [ ] Student Input
- [ ] Accreditation/certification compliance
- [ ] Review of catalog information
- [ ] Other (be specific):

What is the date that this course change was approved by departmental or program faculty? 03/03/2021

Current Status:

College Council Review

Proposal Progress:

03/04/2021 - Submitted by Department Head (William Bray)

Review Comments:

03/04/2021 - Department Head Review - William Bray - This is an obvious deletion that needs to be done.

No review notes have been added.

Copy As New Proposal

Last Updated: 03/08/2021 07:43 Contact Information

Missouri State

Curricular Action Workflow

Change Course Proposal Form

Submitted on 03/10/2021 by Kartik Ghosh (Kartikghosh@missouristate.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

AST114 Survey of Astronomy

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

AST 114 Survey of Astronomy

General Education Course (Focus on Physical Sciences). MOTR number ASTR 100 - Astronomy. Historical and descriptive aspects of astronomy; topics of current interest related to space science. May only receive credit for one of AST 113, AST 114, or AST 115. 4(4-0) F,S

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

AST 114 Survey of Astronomy

~~General Education Course (Focus on Physical Sciences). MOTR number ASTR 100 –~~ ~~Astronomy.~~ Historical and descriptive aspects of astronomy; topics of current interest related to space science. May only receive credit for one of AST 113, AST 114, or AST 115. 4(4-0) F,S

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What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [ ] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [x] Description

Reason for proposed change

AST 114 is no more a GENED Course. So the course description is modified accordingly.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? ( ) No ( ) Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [ ] Routine or annual review/assessment of curriculum
- [x] Faculty Input
- [ ] Student Input
- [ ] Accreditation/certification compliance
- [x] Review of catalog information
- [ ] Other (be specific):

☑ Check if this is a non-substantive change.

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 03/09/2021

Current Status:

College Council Review

Proposal Progress:

03/10/2021 - Submitted by Department Head (Robert Mayanovic)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

Copy As New Proposal

Missouri State

Curricular Action Workflow

designed by Computer Ser

Change Course Proposal Form

Submitted on 03/04/2021 by Kartik Ghosh (Kartikghosh@missouristate.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

AST311 Astronomical Techniques

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

AST 311 Astronomical Techniques

Prerequisite: MTH 135 or MTH 136; and AST 113 or AST 114 or AST 115. Intermediate level course; actual techniques of astronomical observation, methods of analysis of these observations, possible interpretations of acquired data. In laboratory, each student obtains observations for study in spectroscopy, photometry, and CCD imaging. 3(2-2) FO

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

AST 311 Astronomical Techniques

Prerequisite: ~~MTH 135 or~~ MTH 136~~;~~ and AST 113 or AST 114 or AST 115. Intermediate level course; actual techniques of astronomical observation, methods of analysis of these observations, possible interpretations of acquired data. In laboratory, each student obtains observations for study in spectroscopy, photometry, and CCD imaging. 3(2-2) FO

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What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [x] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [ ] Description

Reason for proposed change

As MTH 135 will not be available any more, it is required to remove this prerequisite from AST 311 and other courses.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? (•) No ( ) Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [ ] Routine or annual review/assessment of curriculum
- [x] Faculty
- [ ] Student Input

Input

- [ ] Accreditation/certification compliance
- [x] Review of catalog information
- [ ] Other (be specific):

- [x] Check if this is a non-substantive change.

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 03/03/2021

Current Status:

College Council Review

Proposal Progress:

03/05/2021 - Submitted by Department Head (Robert Mayanovic)

Review Comments:

No comments have been added to this proposal.

No review notes have been added.

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Curricular Action Workflow

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Change Course Proposal Form

Submitted on 03/05/2021 by Kartik Ghosh (Kartikghosh@missouristate.edu).

***All fields require input**

This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

PHY123 Introduction to Physics I

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

PHY 123 Introduction to Physics I

Prerequisite: C or better in MTH 135 or MTH 136; or MTH 287 or eligibility for enrollment in MTH 261. General Education Course (Focus on Physical Sciences). MOTR number PHYS 150L - Physics I with Lab. An introduction to physical theories covering the content areas of mechanics, fluids, sound, and thermodynamics. A knowledge of the laws of Physics will help the student better understand the world and how these laws can be used to make informed decisions to improve society. A grade of "C" or better is required in this course to take PHY 124. 4(3-2) F,S

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

PHY 123 Introduction to Physics I

Prerequisite: C or better in ~~MTH 135 or~~ MTH 136~~;~~ or MTH 287 or eligibility for enrollment in MTH 261. General Education Course (Focus on Physical Sciences). MOTR number PHYS 150L - Physics I with Lab. An introduction to physical theories covering the content areas of mechanics, fluids, sound, and thermodynamics. A knowledge of the laws of Physics will help the student better understand the world and how these laws can be used to make informed decisions to improve society. A grade of "C" or better is required in this course to take PHY 124. 4(3-2) F,S

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What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [x] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [ ] Description

Reason for proposed change

As MTH135 will not be available any more, it is required to remove this prerequisite from PHY 123 and other courses.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? (•) No ( ) Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [ ] Routine or annual review/assessment of curriculum
- [x] Faculty Input
- [ ] Student Input
- [ ] Accreditation/certification compliance
- [x] Review of catalog information
- [ ] Other (be specific):

- [x] Check if this is a non-substantive change.

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 03/03/2021

Current Status:
College Council Review

Proposal Progress:
03/05/2021 - Submitted by Department Head (Robert Mayanovic)

Review Comments:
No comments have been added to this proposal.

No review notes have been added.

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This proposal applies to:

- (●) An existing COURSE
- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

PHY333 Intermediate Mechanics

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

PHY 333 Intermediate Mechanics

Prerequisite: PHY 203 and PHY 391 and MTH 303. Classical mechanics of particles. Topics include kinematics, dynamics, oscillations, central forces, conservation theorems, scattering, and an introduction to the Lagrangian and Hamiltonian formulations of mechanics. 3(3-0) F

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

PHY 333 Intermediate Mechanics

Prerequisite: PHY 203 and ~~PHY 391~~ **PHY 319** and MTH 303. Classical mechanics of particles. Topics include kinematics, dynamics, oscillations, central forces, conservation theorems, scattering, and an introduction to the Lagrangian and Hamiltonian formulations of mechanics. 3(3-0) F

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What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [x] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [ ] Description

Reason for proposed change

Recently, the course number for PHY 391 was changed to PHY 319. As PHY 391 is the prerequisite for several courses, it is required to incorporate this change to other courses including PHY 333, PHY353, PHY 392, and PHY 476.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? (•) No ( ) Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [ ] Routine or annual review/assessment of curriculum
- [x] Faculty Input
- [ ] Student Input
- [ ] Accreditation/certification compliance
- [x] Review of catalog information
- [ ] Other (be specific):

Check if this is a non-substantive change.

What is the date that this course change was approved by departmental or program faculty? (MM/DD/YYYY) 02/12/2021

Current Status:

College Council Review

Proposal Progress:

03/05/2021 - Submitted by Department Head (Robert Mayanovic)

Review Comments:

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No review notes have been added.

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This proposal applies to:

- (●) An existing COURSE
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Existing Course:

PHY353 Electricity and Magnetism

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

PHY 353 Electricity and Magnetism

Prerequisite: PHY 204 and PHY 391. An introduction to the theory of electric and magnetic fields and their sources. Topics include electrostatic and magnetostatic fields in a vacuum, electric potential, magnetic vector potential, electromagnetic fields, and Maxwell's equations. 3(3-0) F

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

PHY 353 Electricity and Magnetism

Prerequisite: PHY 204 and ~~PHY 391~~ **PHY 319**. An introduction to the theory of electric and magnetic fields and their sources. Topics include electrostatic and magnetostatic fields in a vacuum, electric potential, magnetic vector potential, electromagnetic fields, and Maxwell's equations. 3(3-0) F

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What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [x] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [ ] Description

Reason for proposed change

Recently, the course number for PHY391 was changed to PHY 319. As PHY 391 is the prerequisite for several courses, this change should be reflected in other courses including PHY 333, PHY353, PHY 392, and PHY 476.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? ◉ No ○ Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

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Proposal Progress:

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Review Comments:

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- ( ) An existing REGULAR (e.g. permanent) SECTION of a variable content course.

Existing Course:

PHY392 Mathematics for Science and Engineering II

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

PHY 392 Mathematics for Science and Engineering II

Prerequisite: PHY 391. A continuation of PHY 391 with topics selected from complex integration, numerical solutions to differential equations, special functions, probability distribution functions, and group theory. 3(3-0) D

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

PHY 392 Mathematics for Science and Engineering II

Prerequisite: ~~PHY 391.~~ **PHY 319.** A continuation of **PHY 319** ~~PHY 391~~ with topics selected from complex integration, numerical solutions to differential equations, special functions, probability distribution functions, and group theory. 3(3-0) D

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What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [x] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [x] Description

Reason for proposed change

Recently, the course number for PHY391 was changed to PHY 319. As PHY 391 is the prerequisite for several courses, this change should be reflected in other courses including PHY 333, PHY353, PHY 392, and PHY 476.

Does this change affect course assessment (e.g. student learning evidence/outcomes)? ◉ No ○ Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [ ] Routine or annual review/assessment of curriculum
- [x] Faculty Input
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- [x] Review of catalog information
- [ ] Other (be specific):

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Current Status:

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Proposal Progress:

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This proposal applies to:

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Existing Course:

PHY476 Introduction to Nuclear and Particle Physics

Will this proposal need to be reviewed by CGEIP? (●) No ( ) Yes

Will this proposal need to be reviewed by EPPC? (●) No ( ) Yes

Is there a graduate/undergraduate parallel course to this one? (●) No ( ) Yes

Current online catalog description:

PHY 476 Introduction to Nuclear and Particle Physics

Prerequisite: PHY 375 and PHY 391 and MTH 303. Studies subatomic structure, basic constituents and their mutual interactions. Topics include nuclei, radioactivity, interactions of radiation with matter, particle detection, accelerators, nuclear models and reactions, and classification and interactions of quarks and other elementary particles. 3(3-0) S

Revise the current online catalog description as needed: (Strikethrough all deletions and insert/bold new information. Any content that is copied and pasted will lose existing formatting; please review prior to submission.)

PHY 476 Introduction to Nuclear and Particle Physics

Prerequisite: **PHY 319** and PHY 375 ~~and PHY 391~~ and MTH 303. Studies subatomic structure, basic constituents and their mutual interactions. Topics include nuclei, radioactivity, interactions of radiation with matter, particle detection, accelerators, nuclear models and reactions, and classification and interactions of quarks and other elementary particles. 3(3-0) S

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What is changing? Check all boxes that apply.

- [ ] Course Code
- [ ] Course Number (Check Availability)
- [ ] Title
- [x] Prerequisite
- [ ] Credit Hours/Contact Hours
- [ ] Periodicity
- [ ] Description

Reason for proposed change

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Does this change affect course assessment (e.g. student learning evidence/outcomes)? ◉ No ○ Yes

Explain.

How did you determine the need for this change? Check all boxes that apply or specify other.

- [ ] Routine or annual review/assessment of curriculum
- [x] Faculty
- [ ] Student Input

Input

- [ ] Accreditation/certification compliance
- [x] Review of catalog information
- [ ] Other (be specific):

- [x] Check if this is a non-substantive change.

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