UNIVERSITY OF MARY WASHINGTON – EXPEDITED COURSE CHANGE PROPOSAL

Submit this form electronically, beginning with the first required level of review (department or college level). Each level of review passes the form and any attachments to the next level when the action is approved.

Submitted by: Chris Garcia	**Date Prepared: 11/27/2018**
Department/Discipline(s) and Course Number(s): DSCI 401 (also cross-listed as DATA 401)	
Course Title: Foundations and Applications of Data Analytics	

Type of change (*check all applicable*):
Number* _____ Title__X___ Description__X__ Prerequisites ____ Deletion_____ Cross list**____

**This course number must be approved by the Office of the Registrar before the proposal is submitted. With this course proposal, attach a list of ALL COURSES that will be affected by the number change (for example, cases where the course number that is changing is a prerequisite for another course).*

***To cross list courses between departments/colleges, there should be two cover sheets submitted with the proposal – one by the chair of each department with signatures from the relevant College Curriculum Committee Chair.*

Effective Date: FALL Semester, Year __Fall 2019_____

Current Catalog Entry	**Proposed Catalog Entry** (suggested length – less than 50 words)
DSCI 401 – Foundation and Applications of Data Analytics (3) Prerequisite: Grade of C or better in CPSC 220 or DSCI/CPSC 219 or equivalent. This course develops an overview of the challenges of developing and applying analytics for insight and decision making. Examples and cases will come from customer relation management, price modeling, social media analytics, location analysis and other business domains. Cross-listed as DATA 401.	DSCI 401 – Applied Machine Learning (3) Prerequisite: Grade of C or better in CPSC 220 or DSCI/DATA 219 or equivalent. This course provides an introduction to modern machine learning methods with an emphasis on application. Traditional algorithms for classification, clustering, and regression are covered as well as model development and performance evaluation. Select deep learning algorithms, including convolutional and LSTM networks are also covered. Examples will come from customer behavior modeling, text and image classification, and other interesting domains. Cross-listed as DATA 401.

JUSTIFICATION *(including impact on majors, minors, concentrations, and general education courses within the University curriculum; attach additional pages if required).* **Any change that impacts another Department must have a written statement (such as a copy of an email) from the Chair(s) agreeing to the change.**

This change is intended to 1) modernize the course to include new developments in the field, and 2) build on the most recent prerequisite structure, which allows the course to cover more advanced material than previously possible. Since this change is simply a modernization of an existing course, no significant impacts are expected.

TRANSITION PLAN (*describe how will students who are in Catalogs where the course is required for a major be accommodated; attach additional pages if required)*

No specific actions are necessary to transition since this is a simple updating of an existing course.

Approvals

Expedited Course Change Cover Sheet (July 2018)

Department Chair_____ _____ **Date:** ___**11/27/2018**_____

College Curriculum Chair_____ **Date:**_____

Expedited course changes are posted for a 10-class day comment period. If no comments are raised, the proposal becomes final. All expedited proposals approved in this way will be noted on the UCC web site. If comments are raised, the proposal may be reviewed by the UCC and then approved or it may be returned to the CCC for additional deliberation (as required).

Subject: DSCI 401 changes - approval from other department
Date: Thursday, January 24, 2019 at 4:41:05 PM Eastern Standard Time
From: Rachel Graefe-Anderson (rgraefea) <rgraefea@umw.edu>
To: John Morello (jmorello) <jmorello@umw.edu>

Hi John,

Confirmation of approval of the changes to DSCI 401 from the Computer Science Department can be found in the email stream below.

Thanks,

Rachel

Rachel Graefe-Anderson, Ph.D.
Assistant Professor of Finance
College of Business
University of Mary Washington
Fredericksburg, VA

From: Christopher Garcia (cgarcia)
Sent: Thursday, January 24, 2019 4:13 PM
To: Rachel Graefe-Anderson (rgraefea)
Subject: Fw: DSCI 401

From: Christopher Garcia (cgarcia)
Sent: Thursday, January 24, 2019 12:13 AM
To: Stephen Davies (sdavies)
Subject: Re: DSCI 401

Yes - all work is done in Python. Good thoughts here, and you are right that there is particular focus on application (especially related to business, since it is taught in COB). There is also a lot of emphasis on developing the intuition of which techniques are appropriate for different kinds of problems.

Thanks for the fast response!

Best,
Chris

From: Stephen Davies (sdavies)
Sent: Wednesday, January 23, 2019 11:42 PM
To: Christopher Garcia (cgarcia)
Subject: Re: DSCI 401

Sure, I'm on board. I will say that there's likely a lot of overlap
between what you have described here and our DATA 419, but it's not like one
could ever exhaust that material, nor is there any harm in students going

through those super-deep concepts more than once.

If you emphasized a lot of the applications mentioned in the last sentence (especially the business-oriented ones like customer behavior modeling), I think that would help the course maintain its distinct focus with respect to our other DS offerings, and also be appropriate to the business college.

You're doing all this stuff in Python, I assume?

- Stephen

Christopher Garcia (cgarcia) wrote:

> Hi Stephen,
>
> I seem to recall emailing you a while ago about proposed changes for DSCI/DATA 401, but after looking through my email I cannot find any record of this. I want to update the title and contents to reflect the modernization of content and also the higher programming skills of incoming students.
>
> I am attaching the proposal - are you on board with this? (Please reply yes or no quickly if you are able - it is being held up because of this. Thanks!)
>
> Best,
>
> Chris