Request for Graduate Course Addition

1. Prepare one paper copy with all signatures and supporting material and forward to the Graduate Council Chair.
2. E-mail one identical PDF copy to the Graduate Council Chair. If attachments included, please merge into a single file.
3. **The Graduate Council cannot process this application until it has received both the PDF copy and the signed hard copy.**

College: Medicine   Dept/Division:Department of Clinic   Alpha Designator/Number: CTS 611   ◯ Graded   ⦿ CR/NC

Contact Person: Alfred Cecchetti, PhD, MSc, MSc IS   Phone: 304-691-1585

NEW COURSE DATA:

New Course Title: Machine Learning Journal Club

Alpha Designator/Number:

C	T	S		6	1	1			

Title Abbreviation:

M	A	C	H	I	N	E		L	E	A	R	N		J	O	U	R	N	A	L		C	L	U

(Limit of 25 characters and spaces)

Course Catalog Description:
(Limit of 30 words)

Articles that describe either clinical or translational research along with machine learning techniques will be discussed. Students are expected to read and contribute to the in class discussions/presentations.

Co-requisite(s): none   First Term to be Offered: Summer 2019

Prerequisite(s): none   Credit Hours: 1

Course(s) being deleted in place of this addition (*must submit course deletion form*): none

Signatures: if disapproved at any level, do not sign. Return to previous signer with recommendation attached.

Dept. Chair/Division Head _____   Date _____

Registrar _____   Date _____

College Curriculum Chair _____   Date _____

Graduate Council Chair _____   Date _____

College: Medicine   Department/Division: Department of Clinical and T   Alpha Designator/Number: CTS 611

Provide complete information regarding the new course addition for each topic listed below. Before routing this form, a complete syllabus also must be attached addressing the items listed on the first page of this form.

1. FACULTY: Identify by name the faculty in your department/division who may teach this course.

Alfred Cecchetti, PhD, MSc, MSc IS

2. DUPLICATION: If a question of possible duplication occurs, attach a copy of the correspondence sent to the appropriate department(s) describing the proposal. Enter "**Not Applicable**" if not applicable.

A Marshall journal club does not exist with a focus on novel machine learning uses in clinical cases.

3. REQUIRED COURSE: If this course will be required by another deparment(s), identify it/them by name. Enter "**Not Applicable**" if not applicable.

Not Applicable

4. AGREEMENTS: If there are any agreements required to provide clinical experiences, attach the details and the signed agreement. Enter "**Not Applicable**" if not applicable.

Not Applicable

5. ADDITIONAL RESOURCE REQUIREMENTS: If your department requires additional faculty, equipment, or specialized materials to teach this course, attach an estimate of the time and money required to secure these items. (Note: Approval of this form does not imply approval for additional resources.) Enter "**Not Applicable**" if not applicable.

Not Applicable

6. COURSE OBJECTIVES: (May be submitted as a separate document)

The Machine Learning Journal Club course objectives are to introduce students to the algorithms used in translational research to understand and predict the disease process either in humans or animals.

7. COURSE OUTLINE   (May be submitted as a separate document)

Discussion of various topics in machine learning and translational research. Example are:

Dugan, T. M., Mukhopadhyay, S., Carroll, A., & Downs, S. (2015). Machine learning techniques for prediction of early childhood obesity. Applied clinical informatics, 6(03), 506-520.

Jindal, K., & Baliyan, N. G. (2017). Obesity Prediction using Ensemble Machine Learning.

Hashem, S., Esmat, G., Elakel, W., Habashy, S., Raouf, S. A., Elhefnawi, M., ... & ElHefnawi, M. (2018). Comparison of Machine Learning Approaches for Prediction of Advanced Liver Fibrosis in Chronic Hepatitis C Patients. IEEE/ACM transactions on computational biology and bioinformatics, 15(3), 861-868.

Majnaric, L., Babic, F., Lukácová, A., & Holzinger, A. (2015). The metabolic syndrome characteristics extended by using a machine learning approach. Atherosclerosis, 241(1), e171.

8. SAMPLE TEXT(S) WITH AUTHOR(S) AND PUBLICATION DATES (May be submitted as a separate document)

9. EXAMPLE OF INSTRUCTIONAL METHODS (Lecture, lab, internship)

lecture pass/fail

10. EXAMPLE EVALUATION METHODS (CHAPTER, MIDTERM, FINAL, PROJECTS, ETC.)

Grades are based on:
1. Attendance
2. Students contribution to in class discussions (participation/presentations)

11. ADDITIONAL GRADUATE REQUIREMENTS IF LISTED AS AN UNDERGRADUATE/GRADUATE COURSE

12. PROVIDE COMPLETE BIBLIOGRAPHY   (May be submitted as a separate document)

Selected on a weekly basis, examples are:

Dugan, T. M., Mukhopadhyay, S., Carroll, A., & Downs, S. (2015). Machine learning techniques for prediction of early childhood obesity. Applied clinical informatics, 6(03), 506-520.

Jindal, K., & Baliyan, N. G. (2017). Obesity Prediction using Ensemble Machine Learning (Doctoral dissertation).

Hashem, S., Esmat, G., Elakel, W., Habashy, S., Raouf, S. A., Elhefnawi, M., ... & ElHefnawi, M. (2018). Comparison of Machine Learning Approaches for Prediction of Advanced Liver Fibrosis in Chronic Hepatitis C Patients. IEEE/ACM transactions on computational biology and bioinformatics, 15(3), 861-868.

Majnaric, L., Babic, F., Lukácová, A., & Holzinger, A. (2015). The metabolic syndrome characteristics extended by using a machine learning approach. Atherosclerosis, 241(1), e171.

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Please insert in the text box below your course summary information for the Graduate Council agenda. Please enter the information exactly in this way (including headings):

Department:
Course Number and Title:
Catalog Description:
Prerequisites:
First Term Offered:
Credit Hours:

Department: Department of Clinical and Translational Sciences (DCTS)
Course Number and Title: CTS 611 Machine Learning Journal Club
Catalog Description: Articles that describe either clinical or translational research along with machine learning techniques will be discussed. Students are expected to read, contribute to in class discussions/ presentations at 1 hour weekly sessions.
Prerequisites: None
First Term Offered: Summer 2019
Credit Hours: 1

CTS 611 Machine Learning Journal Club
Marshall University, School of Medicine
Summer 2019

General Information:

Professor: Alfred Cecchetti, PhD, MSc, MSc IS
Phone: 304-691-1585
Email: cecchetti@marshall.edu
Office: 281 TGRI, ECCC 2nd Floor
Lecture: TBA

Course Description:

Articles that describe either clinical or translational research along with machine learning techniques will be discussed. Students are expected to read and contribute to in class discussions/presentations at 1 hour weekly sessions.

Credit Hours: 1

Course Focus

Translational research is concerned with bringing bioscience research discoveries into patient care. Translational studies aim to accelerate research findings from bench (biological or mathematical using animal as well as human vectors) to bedside and into widespread clinical practice. The students will take part in discussion of various topics in machine learning and translational research.

Text and Materials:

Selected on a weekly basis, examples are:

1. Dugan, T. M., Mukhopadhyay, S., Carroll, A., & Downs, S. (2015). Machine learning techniques for prediction of early childhood obesity. Applied clinical informatics, 6(03), 506-520.

2. Jindal, K., & Baliyan, N. G. (2017). Obesity Prediction using Ensemble Machine Learning (Doctoral dissertation).

3. Hashem, S., Esmat, G., Elakel, W., Habashy, S., Raouf, S. A., Elhefnawi, M., ... & ElHefnawi, M. (2018). Comparison of Machine Learning Approaches for Prediction of Advanced Liver Fibrosis in Chronic Hepatitis C Patients. IEEE/ACM transactions on computational biology and bioinformatics, 15(3), 861-868.

Program Outcomes:

The Machine Learning Journal Club course objectives are to introduce students to the algorithms used in translational research to understand and predict the disease process either in humans or in animals

Policies:

Attendance Policy: Attendance is required, notification through email or in the classroom should be at least 24 hours in advance.

Grading policy:
Pass/Fail

Grade Weights:
Attendance 50%, In-class activity & participation 50%

Classroom and Lab Behavior: The use of mobile devices (making calls, texting, emailing, etc.) is not permitted during class and lab times. You may leave your phone on vibrate or silence mode in order to receive emergency calls.

Academic Integrity: All students are expected to present and represent their own original work and properly credit sources used in preparation of their own original work. Discussion of programming assignments and helping each other with debugging is permissible but copying from others or the internet is not permissible.

Harassment Policy: The University strongly disapprove and expressly prohibit any form of harassment or discrimination based on race, color, national origin, ancestry, religion, sex, age, sexual orientation, disability, veteran status, marital status or any other characteristic protected by applicable federal, state or local laws.

ADA Policy: If a student wishes to be identified as having a physical, mental, or learning disability, that may or may not require reasonable accommodation(s), he/she must register with the Office of Accessibility. These registered students should identify themselves to their instructors and provide a written statement from the Accessibility Office that indicates the appropriate accommodations. The process of a student self-proclaiming the need for accommodation should occur as early in the semester as possible.

FERPA: The University is committed to fully respecting and protecting the rights of students under the Family Educational Rights and Privacy Act (FERPA). These rights generally include the right to inspect, review and seek amendment to the student's education records and the right to provide written consent before personally identifiable information from education records is disclosed. Under FERPA, students have the right to file a complaint with the US Department of Education concerning alleged failures to comply with FERPA.