Course Approval Form

For instructions:
http://registrar.gmu.edu/facultystaff/catalog-revisions/course/

Action Requested: (definitions available at website above)
[X] Create NEW [ ] Inactivate
[ ] Modify (check all that apply below)

[ ] Title (must be 75% similar to original) [ ] Repeat Status [ ] Prereq/coreq [ ] Grade Mode
[ ] Credits [ ] Schedule Type [ ] Restrictions [ ] Other: _____

Course Level:
[X] Undergraduate [ ] Graduate

College/School: COS **Department:** Computational and Data Sciences
Submitted by: Andrew Crooks **Ext:** 34640 **Email:** Acrooks2@gmu.edu

Subject Code: CDS **Number:** 292
(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Effective Term: [ ] Fall [X] Spring [ ] Summer *Year* 2017

Title:
Current: Introduction to Social Network Analysis
Banner (30 characters max w/ spaces): Intro to Soc Network Analysis
New:

Fulfills Mason Core Req? (undergrad only)
[ ] Currently fulfills requirement
[ ] Submission in progress

Credits: (check one)
[X] Fixed → 3
[ ] Variable → to
[ ] Lec + Lab/Rct→ 0 or

Repeat Status: (check one)
[X] Not Repeatable (NR)
[ ] Repeatable within degree (RD) →
[ ] Repeatable within term (RT) →
Max credits allowed: (required for RT/RD status only)

Grade Mode: (check one)
[X] Regular (A, B, C, etc.)
[ ] Satisfactory/No Credit
[ ] Special (A, B C, etc. +IP)

Schedule Type: (check one)
LEC can include LAB or RCT if linked sections will be offered
[X] Lecture (LEC)
[ ] Lab (LAB)
[ ] Recitation (RCT)
[ ] Internship (INT)
[ ] Independent Study (IND)
[ ] Seminar (SEM)
[ ] Studio (STU)

Prerequisite(s) (NOTE: hard-coding requires separate Prereq Checking form; see above website):
None

Corequisite(s):

Restrictions Enforced by System: Major, College, Degree, Program, etc. Include Code(s).
None

Equivalencies (check only as applicable):
[ ] YES, course is 100% equivalent to _____
[ ] YES, course renumbered to or replaces _____

Catalog Copy for NEW Courses Only (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	**Notes** (List additional information for the course)
An introduction to methods and applications that examine social systems based on relations, structures, connectivity, location, roles, interactions, and other network properties. Example applications of Social Network Analysis covered will include politics, diseases, organizations, along with a variety of other social phenomena.	

Indicate number of contact hours: Hours of Lecture or Seminar per week: 3 Hours of Lab or Studio: 0
When Offered: (check all that apply) [ ] Fall [ ] Summer [X] Spring

Approval Signatures

Department Approval Date College/School Approval Date

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

For Graduate Courses Only

Graduate Council Member Provost's Office Graduate Council Approval Date

Form revised 9/14/2015

Course Proposal Submitted to the College of Science Curriculum Committee (COSCC)

The form above is processed by the Office of the University Registrar. This second page is for the COSCC's reference. Please complete the applicable portions of this page to clearly communicate what the form above is requesting.

FOR ALL COURSES (required)

Course Number and Title: CDS 292: Introduction to Social Network Analysis

Date of Departmental Approval: 10th November 2015

FOR NEW COURSES (required if creating a new course)

- Reason for the New Course:
  - Social network analysis (SNA) is at the heart of big data analysis. Companies such as Facebook, Twitter along with governments all study the connections between people. The intent of this course is to provide students with theory and tools to study and analyze social networks.
  - Students will be required to carry out short SNA studies in this course thus turning what has been taught in the class into practice.
  - By the end of the course the student will not only understand the theory and concepts of SNA but be able to design and implement a simple SNA project, that starts with a research question, data collection and why specific methods are used and concludes with some data analysis.
- Relationship to Existing Programs:
  - Currently GMU does not offer undergraduate courses in SNA. Only at the graduate level
- Relationship to Existing Courses: None
- Semester of Initial Offering: Spring 2017
- Proposed Instructors: TBD
- Tentative Syllabus Below

CDS 292
Introduction to Social Network Analysis

-- DRAFT SYLLABUS --

Prerequisites: None

Credits: 3

Instructor: TBD

Office Hours: TBD

Course Description: An introduction to methods and applications that examine social systems based on relations, structures, connectivity, location, roles, interactions, and other network properties. Example applications of Social Network Analysis covered will include politics, diseases, organizations, along with a variety of other social phenomena.

Lecture Content:

1. Introduction to SNA
2. Methods
    a. Centrality
    b. Subgroups
    c. Brokers and bridges
        i. Bridges, the Strength of weak ties etc..
    d. Random Network Models
    e. Small World Network Models
    f. Process on Networks
        i. Diffusion, contagion etc…
    g. Network Hypothesis testing
    h. Network Visualization
    i. Data collection (Social media, “big data” etc.)
3. Applications

a. Politics

b. Diseases

c. Organizations

d. ……and many others as SNA is applied to a huge range of fields.

Homework: Students will be expected to complete bi-weekly assignments and 1 project.
Exams: There will be one final exam and a midterm.
Evaluation: Homework (40%), Project (20%), Midterm (10%), Final Exam (30%)

Required Textbooks: Instructor provided