George Mason University
Graduate Course Approval/Inventory Form

Please complete this form and attach a copy of the syllabus for new courses. Forward it as an email attachment to the Secretary of the Graduate Council. A printed copy of the form with signatures should be brought to the Graduate Council Meeting. Complete the Coordinator Form on page 2, if changes in this course will affect other units.

Please indicate:  __X__ NEW  ____ MODIFY  ____ DELETE

Local Unit: CSS  Graduate Council Approval Date:

Course Abbreviation: CSS  Number: 655

Full Course Title: SOCIAL SYSTEMS DYNAMICS

Abbreviated Course Title (24 characters max.): SOCIAL SYSTEMS DYNAMICS

Credit hours:  3:3:0  Program of Record: CSS

Repeatable for Credit?  
_ X_ D=Yes, not within same term  Up to  hours
_ T=Yes, within the same term  Up to  hours
_ N=Cannot be repeated for credit

Activity Code (please indicate): _X_ Lecture (LEC)  _ Lab (LAB)  _ Recitation (RCT)
_ Studio (STU)  _ Internship (INT)  _ Independent Study (IND)  _ X_ Seminar (SEM)

Catalog Credit Format  3:3:0  Course Level: GF(500-600) _X__ GA(700+)_

Maximum Enrollment: 20  For NEW courses, first term to be offered: Fall 2006+

Prerequisites: CSS 600 previously or simultaneously

Catalog Description (35 words or less)  Please use catalog format and attach a copy of the syllabus for new courses: Introduction to systems dynamics modeling of social systems governed by levels/rates or stocks/flows processes, with applications such global modeling, terrorism, urban dynamics, organizations, social and international conflict.

For MODIFIED or DELETED courses as appropriate:

Last term offered:  Previous Course Abbreviation:  Previous number:

Description of modification:

APPROVAL SIGNATURES:
Submitted by:  ___Prof. Claudio Cioffi-Revilla_ email: _ccioffi@gmu.edu

Department/Program:  _Center for Social Complexity_ Date: ____2/3/2004____

College Committee:  ______________________Date: ____________________

Graduate Council Representative: ______________________ Date: __________________
Course Name and Number: CSS 655 (3:3:0) Social Systems Dynamics

Catalog Description: Introduction to systems dynamics modeling of social systems governed by levels/rates or stocks/flows processes, with applications such global modeling, terrorism, urban dynamics, organizations, social and international conflict.

Learning objectives: Understand the systems dynamics framework as a modeling tool; Identify classes and specific social systems or processes that can be modeled in the systems dynamics perspective; construct and analyze a social system dynamics model, up to computing the future evolution; conduct sensitivity analysis; understand basic elements model validation and calibration

Syllabus topics
Forrester’s systems dynamics
DYNAMO
Early models of the MIT Systems Dynamics Group
Club of Rome Models
STELLA
Survey of SD models in the social sciences
  Anthropology
  Economics
  Sociology
  Political science
  Management
  Global models
Model identification
Parameter estimation
Simulation
Sensitivity analysis
Development
Relation to object-oriented models
Students are expected to construct and analyze a systems dynamics model in their chose area of social science interest.

Readings and resources:
Systems Dynamics Society: http://www.albany.edu/cpr/sds/
Additional readings from the course bibliography.