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: 605

Full Course Title: OBJECT-ORIENTED MODELING IN SOCIAL SCIENCE

Abbreviated Course Title (24 characters max.): OBJ-ORIENT MODEL SOC SCI

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

Repeatable for Credit?  
_ _ D=Yes, not within the same term  Up to hours 
_ _ T=Yes, within the same term  Up to hours 
_ _ X=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 2005

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: Presents and applies concepts and principles from the object-based modeling paradigm. Emphasis on the Unified Modeling Language (UML) as a tool for rendering the structure and operation of complex social systems and processes.

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 605 (3:3:0) Object-Oriented Modeling in Social Science

Catalog Description: Presents and applies concepts and principles from the object-based modeling paradigm. Emphasis on the Unified Modeling Language (UML) as a tool for rendering the structure and operation of complex social systems and processes. Prerequisites or co-requisites: CSS 600 Introduction to Computational Social Science. This is a core requirement for candidates in the computational social science Ph.D. program.

Tentative Syllabus

Week 1: Introduction, modeling approaches in the social sciences: statistical, mathematical, and computational.

Week 2: Basic concepts: Objects, Unified Modeling Language (UML).

Week 3: Social science models in UML: first applications and interpretations.

Week 4: Internal and external validity in object-oriented social modeling.

Week 5: Common UML patterns in static models.

Week 6: Social science applications and interpretations of common patterns.

Week 7: Persistent social objects: databases.

Week 8: Advanced topics in social object modeling: abstract classes, multiple inheritance.

Week 9: Dynamic object modeling. Basic concepts and UML.

Week 11: Social science applications and interpretations of dynamic object models.

Week 12: Student project presentations: Abstracts and critiques.

Week 13: Presentation workshop of work-in-progress.

Week 14: Final presentations of student projects.


Other required readings: UML 2 website and selected OOM readings from course bibliography.