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: 645

Full Course Title: SPATIAL AGENT-BASED MODELS OF HUMAN-ENVIRONMENT INTERACTIONS

Abbreviated Course Title (24 characters max.): SPATIAL AGENT-BASED SIMULATIONS

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

Repeatable for Credit? ___ 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 Course Level: GF (500-600) _X___ GA (700+) ___

Maximum Enrollment: For NEW courses, Catalog Description (35 words or less) Please use catalog format and attach a copy of the syllabus for new courses: Prerequisite: CSS 600 or permission of instructor. Discusses key challenges in spatial modeling of human-environment interactions. Reviews agent-based modeling applications in urban/rural interactions, agriculture, forestry, and other areas. Hands-on development of simple ABM models and investigation of linkages between GIS and ABM.

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: ____ ____
College Committee: ___________________________ Date: __________________
Graduate Council Representative: ______________________ Date: _______________
Course Name and Number: CSS 645 (3:3:0)
Spatial Agent-based Models of Human-Environment Interactions

Catalog Description: CSS 600 or permission of instructor. Discusses key challenges in spatial modeling of human-environment interactions. Reviews agent-based modeling applications in urban/rural interactions, agriculture, forestry, and other areas. Hands-on development of simple ABM models and investigation of linkages between GIS and ABM.

Tentative Syllabus
Week 1: Introduction
Week 2: Introduction (Power point slides and tables) and Logo Models (Assignment, Week 3)
Week 3: Integrating Agent-Based Models and Geographic Information Systems
Week 4: Individual-Based Models
Week 5: FEARLUS (Dr. Nick Gotts, Macaulay Institute)
Week 6: Agrarian societies
Week 7: Urban-rural interactions
Week 9: Water Management
Week 10: Pedestrian models
Week 11: Human/non-human species interactions
Week 12: Epidemiology models
Week 13: Participatory approaches
Week 14: Student project presentations
Week 15: Student project presentations

Required textbooks: pdf at http://mason.gmu.edu/~dparker3
Other required readings: