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: 643

Full Course Title: LAND-USE MODELING TECHNIQUES AND APPLICATIONS

Abbreviated Course Title (24 characters max.): LAND-USE COMPUT MODELING

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 _____ X 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 or Corequisite: CSS 600 or permission of instructor.
Survey of literature on spatially explicit empirical models of land-use change. Hands-on experience developing and running simple models. Techniques covered include statistical models, mathematical programming models, cellular automata, agent-based models, and integrated models.

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 643
Land-use Modeling Techniques and Applications

Catalog Description: Prerequisite or Corequisite: CSS 600 or permission of instructor.
Survey of literature on spatially explicit empirical models of land-use change. Hands-on experience developing and running simple models. Techniques covered include statistical models, mathematical programming models, cellular automata, agent-based models, and integrated models.

Tentative Syllabus
Week 1: Introduction.
Week 2: Model Overviews.
Week 3: Drivers of LUCC.
Week 4: Evaluating model performance.
Week 5: Statistical modeling in developing counties and Chappell presentation and Komwa presentation.
Week 6: Bucholtz presentations: Intro to Spatial Econometrics and Irwin Paper
Week 7: Mosher presentation and DeBell presentation (DUEM) and Komwa presentation.
Week 8: Bucholtz presentations: Intro to Spatial Econometrics and Irwin Paper
Week 9: ERS Guest Lectures: Noel Gollehon and Ruben Lubowski.
Week 10: Mosher presentation and DeBell presentation.
Week 11: Linear Programming Examples 1 and 2, Damron presentation, and Bucholz presentation.
Week 12: Agent-based modeling overview and Chappell presentation and Kwon presentation.
Week 13: Census data handout, Geodata sources, Kwon presentation and Damron presentation and Komwa presentation.
Week 14: Term paper presentations: Bucholz, Komwa, Damron, and Chappell.
Week 15: Term paper presentations: DeBell, Kwon, and Mosher.
Required textbooks: pdf at http://mason.gmu.edu/~dparker3
Other required readings: