

ECG 708: Advanced Game Theory

In Workflow

1. 20EC Grad Head (lee_craig@ncsu.edu; charles_safley@ncsu.edu)
2. MGMT CC Chair GR (katherine_krawczyk@ncsu.edu)
3. MGMT Dean GR (steve_allen@ncsu.edu)
4. tcmorant (tamah_morant@ncsu.edu)
5. ABGS Coordinator (george_hodge@ncsu.edu; lian_lynch@ncsu.edu; mlnosbis@ncsu.edu)
6. CALS CC Coordinator GR (renutt@ncsu.edu)
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10. CALS Dean GR (sam_pardue@ncsu.edu)
11. xzheng (xiaoyong_zheng@ncsu.edu)
12. ABGS Meeting (george_hodge@ncsu.edu; lian_lynch@ncsu.edu; mlnosbis@ncsu.edu)
13. ABGS Chair (george_hodge@ncsu.edu; lian_lynch@ncsu.edu; mlnosbis@ncsu.edu)
14. Grad Final Review (george_hodge@ncsu.edu; lian_lynch@ncsu.edu; mlnosbis@ncsu.edu)
15. PeopleSoft (ldmihalo@ncsu.edu; blpearso@ncsu.edu; Charles_Cliff@ncsu.edu; jmharr19@ncsu.edu; Tracey_Ennis@ncsu.edu)

Approval Path

1. Wed, 07 Oct 2015 19:54:44 GMT
Lee Craig (lee_craig): Approved for 20EC Grad Head
2. Thu, 08 Oct 2015 13:35:59 GMT
Tamah Morant (tamah_morant): Approved for MGMT CC Chair GR
3. Thu, 08 Oct 2015 14:44:06 GMT
Steven Allen (steve_allen): Approved for MGMT Dean GR
4. Thu, 17 Dec 2015 15:59:30 GMT
Tamah Morant (tamah_morant): Approved for tcmorant
5. Thu, 07 Jan 2016 21:16:02 GMT
George Hodge (george_hodge): Approved for ABGS Coordinator
6. Thu, 14 Jan 2016 15:34:04 GMT
Robin Clements (renutt): Approved for CALS CC Coordinator GR
7. Mon, 25 Jan 2016 16:57:08 GMT
Robin Clements (renutt): Approved for CALS CC Meeting GR
8. Mon, 25 Jan 2016 17:28:02 GMT
David Ritchie (david_ritchie): Approved for CALS CC Chair GR
9. Mon, 25 Jan 2016 18:02:02 GMT
Robin Clements (renutt): Approved for CALS Final Review GR
10. Mon, 25 Jan 2016 22:07:05 GMT
Samuel Pardue (sam_pardue): Approved for CALS Dean GR
11. Wed, 10 Feb 2016 16:19:48 GMT
Xiaoyong Zheng (xiaoyong_zheng): Approved for xzheng
12. Wed, 10 Feb 2016 16:42:12 GMT
Melissa Nosbisch (mlnosbis): Approved for ABGS Meeting

New Course Proposal

Date Submitted: Tue, 06 Oct 2015 17:24:38 GMT

Viewing: ECG 708 : Advanced Game Theory

Changes proposed by: tcmorant

Course Prefix

ECG (Graduate Economics)

Course Number

708

Cross-listed Course

No

Title

Advanced Game Theory

Abbreviated Title

Adv Game Theory

College

Poole College of Management

Academic Org Code

Economics (20EC)

CIP Discipline Specialty Number

45.0601

CIP Discipline Specialty Title

Economics, General.

Term Offering

Fall Only

Year Offering

Offered Every Year

Effective Date

Fall 2016

Previously taught as Special Topics?

Yes

Number of Offerings within the past 5 years

5

Course Prefix/Number	Semester/Term Offered	Enrollment
ECG 790	Fall 2014	4
ECG 790	Fall 2013	8
ECG 790	Fall 2012	4
ECG 790	Fall 2011	8
ECG 790	Fall 2010	6

Course Delivery

Face-to-Face (On Campus)

Grading Method

Graded/Audit

Credit Hours

3

Course Length

15

weeks

**Contact Hours
(Per Week)**

Component Type

Lecture

Contact Hours

3

Course Is Repeatable for Credit

No

Instructor Name

Thayer Morrill

Instructor Title

Associate Professor

Grad Faculty Status

Assoc

Anticipated On-Campus Enrollment

Open when course_delivery = campus OR course_delivery = blended OR course_delivery = flip

Enrollment Component	Per Semester	Per Section	Multiple Sections?	Comments
Lecture	15	15	No	n/a

Course Prerequisites, Corequisites, and Restrictive Statement

ECG 702 Microeconomics II

Is the course required or an elective for a Curriculum?

No

Catalog Description

Survey of literature on game theory focusing on applications to numerous areas of economics. Course will cover the classic literature on auctions, matching theory and non-cooperative game theory. Special focus on applying these theoretical results to practical problems of market design.

Justification for new course:

Game Theory is an important field in economics that is not currently covered in our graduate program. It is the study of strategic interaction, and its models are used extensively in Industrial Organization, Experimental Economics, and Micro and Macro Theory. The students will be exposed to classic literature on auctions, matching theory and non-cooperative game theory with particular focus on how to model strategic interaction, and how to solving for the equilibria of these models.

Does this course have a fee?

No

Consultation

College(s)	Contact Name	Statement Summary
College of Sciences	Mansoor Haider	Requested that original title of 'Game Theory' be adjusted to distinguish between the undergraduate game theory course offered in the math dept. We changed the name to Advanced Game Theory as this is a doctoral level course.

Instructional Resources Statement

Dr. Thayer Morrill has taught the course at each offering as part of his regular course load. There are no plans to change this arrangement.

Course Objectives/Goals

To expose students to classic literature on matching theory, auctions and non-cooperative games

To relate the study of strategic interaction to topics in economics

To train students how to model strategic interactions and solve for equilibria of such models

Student Learning Outcomes

Model situations of strategic interaction

Analyze the equilibria for various strategic tensions

Identify allocation problems that utilize a non-market solution

Student Evaluation Methods

Evaluation Method	Weighting/Points for Each	Details
Short Paper	20	Auction proposal for a vaccine procurement auction. Grade based on both analysis and quality of writing.
presentation	30	Each student will lead a class discussion of a journal article. Student is expected to prepare a beamer or PPT presentation. Grade based on both mastery of the material and the professionalism of the presentation.
Short Paper	20	Each student will write a 2-4 page referee report of an assigned paper. The report will critique whether or not 1) the paper is correct, 2) the paper is innovative, 3) the paper makes a substantial contribution to the literature (requires a literature review). Ultimately, the student must recommend whether or not the paper deserves to be published.
Homework	25	There will be two take-home problem sets.
Written Assignment	5	Each student will find a newspaper article that describes a business, government agency, or person who did not take into account that people react strategically.

Topical Outline/Course Schedule

Topic	Time Devoted to Each Topic	Activity
Introduction and review of classic games	3	Lecture/discussion: herding activity, static games of complete information, dynamic games of complete information, bayesian games
Auction Theory (Classic and Revenue Equivalence)	1	Lecture/discussion: Ausubel, "Auction Theory for the New Economy" (classic auctions, revenue equivalency),

Auction Theory (Vickery)	1	Lecture/discussion: Ausubel, "The Lovely but Lonely Vickery Auction" (the Vickery auction)
Cooperative Game Theory	2	Lecture/discussion: the Core, marriage games, housing allocation games
Matching Theory and Market Design	3	Lecture/discussion: doctor-hospital choice, public school choice, kidney exchange
Special Topics	3	Lecture/discussion: Topics to include experimental economics, aggregation of information, classic IO models
Presentations	2	Presentations occur throughout the semester and are expected to account for 1-2 weeks of the semester

Syllabus

ECG708-Fall14.pdf

Additional Documentation

Additional Comments

mgnosbis 10/8/2015: No overlapping courses.

ghodge 10/13/2015 Ask for consultation with Mathematics (DGP- Mansoor Haider, m_haider@ncsu.edu; or Dept. Head- Alina Chertock, chertock@math.ncsu.edu) since they have an undergraduate course called "Game Theory". Post a syllabus for the proposed course, not the 790 course. Edit syllabus to include all sections. i changed the course length to 14 weeks unless there is some special reason for only 15 weeks. Return to department for edits.

ghodge 1/7/2016. Ready for ABGS reviewers.

mgnosbis 1/8/2016: Updated workflow to route through CALS college-level approvers, as requested by DGP. Will continue Administrative Board review once approved by CALS.

ABGS Reviewer Comments:

-title on the syllabus has not been changed to Advanced Game Theory.

ghodge 2/6/2016 Ask department to edit syllabus

Course Reviewer Comments

xzheng (Wed, 10 Feb 2016 16:19:26 GMT): The title of the syllabus has been changed to Advanced Game Theory.

Key: 8139