Course Syllabus

Game Theory (Math 323/523)

Description:	*The fundamentals of game theory are covered including dominance, Nash equilibria, and evolutionarily stable solutions. Various models of strategic games are explored and applications to economics, biology, and other disciplines are discussed.*
Credit Hours:	3
Frequency	Offered every 1st summer session.
Audience:	Elective for math majors, elective for IEF and CTS masters students
Prerequisites:	Math 131 (Calculus), Stat 240 (Statistical Analysis) and Econ 221 (Microeconomics). These can be waived with the consent of the instructor.
Format:	Lecture
Typical Textbooks:	*A Brief Introduction to Game Theoretic Modeling*, by Gillman & Housman (a draft version will be provided) *Game Theory and Strategy*, by Philip Straffin (reference) *Models of Conflict and Cooperation*, by Gillman & Housman (reference)
Software:	It will occasionally be useful to have a calculator in class. Students will need to download and install GAMBIT.
Internet:	The gradebook, course notes, and exam will be kept on Blackboard.
Access & Accommodations:	The Access & Accommodations Resource Center (AARC) is the campus office that works with students to provide access and accommodations in cases of diagnosed mental or emotional health issues, attentional or learning disabilities, vision or hearing limitations, chronic diseases, or allergies. You can contact the office at aarc@valpo.edu or 219.464.5206. Students who need, or think they may need, accommodations due to a diagnosis, or who think they have a diagnosis, are invited to contact AARC to arrange a confidential discussion with the AARC office. Further, students who are registered with AARC are required to contact their professor(s) if they wish to exercise the accommodations outlined in their letter from the AARC.
Notice of Cancellation:	In the event class is cancelled, you will be notified through your Valparaiso University e-mail account

Student Learning Objectives:

A. Students will learn the basic concepts of game theory,
B. Students will use these concepts to model economic phenomena,
C. Students will strengthen their quantitative and communication skills.

Topics & Performance Requirements Include (but are not limited to):

1. Identify theoretical structures for a variety of games (A)
2. Construct game theoretic models of phenomena (B)
3. Find Nash equilibria in multiple game settings (A,B,C)

4. Find solutions to coalition games (C)
5. Find Nash solutions to bargaining games (C)
6. Verbally present a game theoretic model and its solution (C)