Basic Course Information: CS 695

I. Catalog Description
Independent work on practical application of an existing methodology or procedure under supervision of a project advisor. Credit assigned upon successful completion of project and oral presentation. Minimum/Maximum Units: Total credit limited to 1 unit, but may be repeated until completion.

II. Required Coursework and Background
Pre-requisite(s): Pass or waiver for the GWT and CS 691. Advancement to Candidacy and approval of project committee required.

III. Expected Outcomes
On successful completion of this course, students will be able to:
- Study in-depth a specific research topic in computer science.
- Gain experience in reading and understanding technical articles.
- Gain programming experience in large-scale project.
- Gain experience in writing project report.
- Communicate effectively in the oral presentation of a research project

Outcomes of this course will build student capacity in each of the following areas as defined by programmatic objectives for the computer science major.

P-SLO 5. An ability of reasoning and problem solving to conduct independent research in the area of specialization.

P-SLO 6. An ability to communicate effectively and defend results of research to peers and broader audiences, both in written and verbal formats

IV. Instructional Materials
Reference:
Selected advanced technical papers in recent computer science publications and relevant textbooks.

V. Minimum Student Material
Selected technical papers (library) and relevant textbooks (library reserve).

VI. Minimum College Facilities
N/A

VII. Course Outline
Topics may vary with instructor and over time. Examples of possible topics might include:

Big Data
Computer Architecture
Computer Graphics, Vision, Animation, and Game Science
Machine Learning
Theory of Computation
Wireless and Sensor Systems
Computer Networks and Security
Artificial intelligence and robotics
Software Engineering
Virtual Reality
Human-computer Interaction

Optical Computing
Neural Networks
Parallel and Distributed Computing
Data Mining
Cloud Computing
Mobile Computing
Cryptography
Voice and Speech Recognition
Genetic Algorithms
DNA-based and molecular computers
Computers in Medicine
Computing in the 21st Century

VIII. Instructional Methods
Research advisor will hold weekly meeting with the student.

IX. Evaluation of Outcomes
A. Student Assessment
       1. Research project
       2. Project report
       3. Oral presentation

B. Meaningful Writing Assignment
Students are required to write a Master project report and prepare presentation slides.

C. A Matrix of Course Student Learning Outcomes vs Methods of Assessment
If the course is being evaluated for accreditation purposes, approved department accreditation assessment tools will additionally be utilized.

Course Learning Outcomes	Methods of Assessment		
	Research Projects	Project Report	Oral Presentation
Study in-depth a specific research topic in computer science.	x	x	
Gain experience in reading and understanding technical articles.	x	x	
Gain programming experience in large-scale project.	x		
Gain experience in writing project report.		x	
Communicate effectively in the oral presentation of a research project			x