Georgia Tech | Ernest Scheller Jr. College of Business

Project Management & Computer Science Research
MGT 8803 / CS 8903
3 Credits

INSTRUCTORS:
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COURSE DESCRIPTION: Project Management & Computer Science Research is a project-driven course in which MBA students partner with Online Masters students in Computer Science (CS) on research projects involving novel data, analytics, and CS methods. The course is run through the Human-Augmented Analytics Group (HAAG), a computational analytics lab, and projects are supplied by faculty and other external collaborators. Past projects have involved computer vision, generative AI, and Natural Language Processing.

Computer Science students are expected to generate, test, and execute novel approaches to research problems; MBA students perform a management role and focus on a particular project management initiative over the course of the semester. Together, all students gain experience working on an interdisciplinary team. At the course's end, CS students (with optional MBA student co-authorship) produce a CS or interdisciplinary conference or journal publication describing their work. MBA students produce a project management report, described further below.

The course model empowers graduate students to take ownership over their research collaborations, gives CS students the opportunity to work on a variety of applications and use cases, and offers MBA students experience with data analytics and CS in a supportive active learning environment. This course is ideal for MBA students with some background or interest in CS, data science, analytics, or computational methods, along with a project management background and interest. MBA students may also use the course to amass project management certification hours.

PREREQUISITE: MGT 6450: Project Management

LEARNING OBJECTIVES: After completing MGT 8803 / CS 8903, MBA students should be able to:

1. Evaluate project management methodologies and frameworks to determine their effectiveness in interdisciplinary, research-driven teams involving computer science, data science, and analytics research projects;
2. Develop a structured plan that incorporates project management concepts and frameworks, e.g. agile, iterative, and stakeholder-driven approaches, and focuses on a particular initiative area to facilitate collaboration between MBA and CS students in executing a research project;
3. Synthesize project outcomes, team dynamics, risk management strategies, and related topics into a professional project management report that critically reflects on the challenges and successes of managing an interdisciplinary data-driven research initiative.

REQUIRED MATERIALS: XXXXX

CLASS POLICIES: XXXXX

GRADES AND ASSESSMENTS: MBA students' grades consist of the four components described below. Participation in authoring the CS students' paper that is submitted to a conference or journal is optional and does not influence the course grade.

Grade component	Percentage of final grade
Initial proposal	20%
Mid-term report	20%
Final Report	20%
Attendance and participation	40%

A 100-90%; B 89-80%; C 79-70%; D 69-60%; F 59-0%

INITIAL PROPOSAL: A major goal of this course is to implement and track the success of project management initiatives in a complex research environment, allowing MBA students to test innovative approaches in a sandbox-like, student-oriented environment. Beyond their general work in managing their project team, each MBA student will choose a specific project management initiative that will be their focus over the course of the semester, e.g. communication strategies, team dynamics and culture, project management software implementation. They will define and scope that initiative at the beginning of the semester in an initial proposal. Proposals will be in written form and also presented during the relevant week's project management meeting.

MID-TERM REPORT: At mid-semester, MBA students will produce an in-progress project management report that covers two general topics: (1) *operations*: their role in managing the research project executed by the CS students, and (2) *initiative*: their progress on their chosen project management initiative. The mid-term report should include reflection on success, failures, and plans for the remainder of the semester. Reports will be in written form and also presented during the relevant week's project management meeting.

FINAL REPORT: The final report will address the same two topics as the mid-term report (*operations* and *initiative*), but will cover the student's and team's work over the full semester. Reports will be in written form and also presented during the relevant week's project management meeting.

ATTENDANCE AND PARTICIPATION: MBA students will meet weekly with their project teams (at a time of each team's choosing) and separately each week with the instructors and the other MBA students from across all projects (at a designated class meeting time). During these class meetings, students will report on their progress and share their project management successes and failures with the whole set of MBA students. Repeated, unexcused absences and/or lack of substantive participation are grounds for a reduction of the attendance and participation grade.

COURSE SCHEDULE

Deviations from the Course Schedule may be necessary and will be announced in advance.

Week 1: Initial all-hands meeting of all CS and MBA students and instructors. Introduction to the course structure and expectations, including some required, standardized operations practices and procedures across all project teams. Decide on project teams' meeting times.

All remaining weeks: Attend the weekly project team meeting and the all-MBA project management meeting.

Weeks 2-3: Weekly meetings. Begin to establish team-specific *operations* practices, expectations, and norms. Ensure compliance with required, standardized *operations* practices and procedures across all project teams. Choose specific *initiative* in consultation with instructors and construct plan for roll-out.

Week 4: Initial proposal due and presented during weekly project management meeting.

Weeks 5-7: Weekly meetings. Continue work on *operations*. Launch *initiative* and observe the "forming–storming–norming–performing" process.[1] Gather feedback from project groups. Assess successes and failures, effectiveness and ineffectiveness on both the *operations* and *initiative* fronts.

Week 8: Mid-term report due and presented during weekly project management meeting.

Weeks 9-13: Weekly meetings. Continue work on *operations* and *initiative*. Continue to gather feedback from project groups. Assess successes and failures, effectiveness and ineffectiveness on both the *operations* and *initiative* fronts.

Week 14: Final report due and presented during weekly project management meeting.

[1] Tuckman's stages of group development: https://www.sixsigmadaily.com/what-is-forming-storming-norming-performing/