
Salisbury University Department of Mathematical Sciences
**MATH/COSC 495 : Directed Consulting
Syllabus (Tentative)**

Description: Provides teams of 3-12 students with experience in using mathematical and computing tools to solve real-world problems posed by a client organization, such as a research institute, business or industry. Combines individual and group work and requires presentation of a written and oral report to the client organization and the department. 4 Hours Credit: Meets four hours per week.

Prerequisites: Invitation by department chair.

Credit: Credit may only be received for one of MATH 495 and COSC 495. MATH/COSC 495 may be taken twice for a maximum of eight credit hours, but used only once toward a major in mathematics or computer science.

Intended Audience: Majors in Mathematics, Data Science, or Computer Science as well as strong STEM majors and minors who wish to work as part of a team in the analysis and solution of problems which arise in the world of applied science, management, and industry.

Objective: This course is designed to:

1. Develop the ability to work as part of a team in the analysis and solution of problems which arise in the world of applied science, management, and industry.
2. Improve the student's ability to do technical writing and speaking.
3. Give the student an opportunity to serve regional business and industry.

Textbooks: Portions of texts; articles from professional journals; technical reports; computer aids such as data, models, and simulation results.

Topic	Weeks
Project Description and Introduction	1
Meeting of the team members with the project director and the technical liaison from the client company for the purpose of being introduced to the problem.	
Research and Development	12
Individual study and analysis of the problem and the relevant mathematics, computer science, and statistics; work as part of the full project team or a subteam in the sharing of ideas, the analysis and possible solution of the problem, and the writing of a report on it; weekly meetings with the project director and the full team to discuss progress and plan further work; monthly meetings with the technical liaison to report progress and receive clarification, suggestions, and direction; occasional meetings with one or more experts in fields pertinent to the problem (perhaps on-campus seminars or workshops conducted by experts); occasional trips, perhaps to the client's location.	
Final Reports	1
Each student will keep a personal journal, contribute to the class written report, and submit a value-added paper (which expresses what s/he has learned and how s/he has grown in the course). The class presents to the client an oral report, and its planning becomes a pre-writing exercise for the written report.	
Total	14

Evaluation

Research, discussion, computation	30%
Contributing to the written report	30%
Participating in the oral report	20%
Value-added paper	20%

- Clear descriptions of thought processes, evidence of critical thinking, and effective communication must be demonstrated in written work.
- **Writing Across the Curriculum:** Students will be expected to communicate mathematics and mathematical ideas effectively in speech and writing. At the University Writing Center, trained consultants are ready to help you at any stage of the writing process. In addition to the important writing instruction that occurs in the classroom and during professors' office hours, the Center offers another site for learning about writing. **All students are encouraged to make use of these important services.**
- **NOTE:** Once a student has received credit, including transfer credit, for a course, credit may not be received for any course with material that is equivalent to it or is a prerequisite for it.