EXP+ Contract

AMS 487

Students may fulfill the Stony Brook Curriculum's EXP+ learning objectives through a mentored learning activity in which the student applies knowledge and skills acquired within the classroom in real-world settings and in which insights and skills developed through real-world experience enhance academic success and professional development. Successful experiential learning requires reflection, mentoring, feedback, critical analysis and synthesis.

Note: This form should be completed by the student in close consultation with the mentor and/or supervisor.

Student name_____ ID#_____

Student email_____ Sponsor/Mentor: _____

Semester: Fa_____ Sp_____ Sum1_____ Sum 2_____ Win_____

Credit hours requested: at least 40 hours (1 credit hour = 40 hours effort/sem. Course is 0-3 credits earned.)

Prerequisites completed (if applicable): A minimum GPA of 3.0 in all Stony Brook courses applying to and demonstrated mastery of the subject at the level of "A" or "A-"; permission of advising instructor and AMS department.

What additional training (if any) must student complete prior to enrollment? Students must read and follow all policies and regulations regarding academic integrity; see http://www.stonybrook.edu/commcms/academic_integrity/policies.html . Students must satisfy responsible conduct of research training; see https://research.stonybrook.edu/responsible-conduct-research-and-scholarship.

Project Description: In 1-3 paragraphs describe the proposed research project, internship, or other learning experience.

As an undergraduate researcher, I will have the opportunity to explore my interests and skills through independent research related to the areas of applied mathematics and statistics of most interest to me. I will engage in problem-solving, in collaboration with my mentor and other members of the associated research group. I will develop new skills in identifying precise problems, formulating them, and addressing them with analyses tools. The specific skills that I learn and the expertise in using analyses tools I gain will reinforce my knowledge in the courses I have taken, enabling me to excel in my education and better prepare me for upcoming course requirements, work-related assignments, or graduate school. I will improve time-management and communication skills. This opportunity will validate my own knowledge of the course material and provide me with hands-on research skills.

Responsibilities and Structure: How many hours/week will you work? Who will be your primary on-site supervisor/mentor? Describe your responsibilities. As an undergraduate researcher, responsibilities will include, but not limited to, assisting my faculty mentor/supervisor with independent project work, including reading research papers, writing reports, utilizing software tools to analyze data, software development, discussions and meetings, collaborating with my supervisor and with other undergraduate or graduate students.

Learning Objectives: What skills/knowledge do you hope to gain from this experience? Check all that apply; describe briefly.

_x__develop problem solving skills: formulate, analyze, and attack mathematical problems in support of an application of math/statistics to real-world problems

__x_work independently, setting goals and managing time: conduct independent research, acquire background knowledge relevant to the project, formulate specific objectives, and schedule a plan of attack

_x__work effectively with a team: engage in research within a research group, sharing hypotheses, problem-solving ideas and results, both orally and in writing

_x__develop communication skills: convey clearly the problem-solving approaches, challenges, obstacles, and results to other students and members of the research group

_x__improve knowledge of your discipline and/or future profession: develop research-level expertise in subareas of the discipline and acquire necessary background knowledge that facilitates research proficiency

_x__acquire discipline-specific skills (e.g., computer, research skills): acquire skills in using and developing software and online tools for conducting mathematical and statistical analysis

___other: as determined by the advisor to promote and/or support the research group's goals

Goals:

1) How do you expect this activity will contribute to your development--academic, professional, intellectual, other?

I expect this activity will provide me with greater mastery of the subject matter, while enabling me to experience aspects of research that can be applied to my future professional activities and/or potential future graduate study.

2) How do you expect to contribute to the goals of the organization or project?

I will contribute to the goals by applying my knowledge of the subject to pursue lines of investigation that will directly support the research efforts of the project, through problem formulations, problem-solving pursuits (e.g., with software-based analysis), and reporting of results.

Reflection: Describe the specific forms in which you will reflect upon and record what you are learning.

1) **During the activity**: How will you record what you are doing and reflect upon what you are learning? (e.g., lab notebooks, journal, blog, emails to academic mentor)

I will maintain a written record (e.g., in a journal, notebook, computer document, or series of emails) and will provide regular updates in the form of oral and written documentation of my research project to the mentor/supervisor or the research group. I will clearly state the problem being addressed, its mathematical formulation, the goals of my research effort, the solution approach, the challenges faced (including approaches I found not to work), and the results obtained.

2) **At the end of the activity**: How will you synthesize/present outcomes and reflect upon what you have learned? (Final reflection may take the form of a paper, a presentation, or another substantial product that addresses: the skills developed; relevance to your academic studies; insights that changed/confirmed your future professional goals, etc.)

The means of presenting the results of my AMS research course will be determined by the research mentor and will typically be in the form of a written report and/or oral presentation about the research project, to include formulation, background research, problem-solving approaches, recommendations, if any, and findings.

Monitoring: How will the academic mentor (and on-site supervisor if applicable) provide feedback?

1) **During the activity**?

The academic mentor will be available for questions or further instruction for the researcher. He/she will guide the student by providing thought-provoking guidance in answering questions or provide alternative approaches to pursue.

2) **At the end of the activity?**

A letter grade will determine the overall effectiveness of the researcher at the end of the semester. Guidance and communication will be ongoing during the course of the semester.

Student Information:	**Undergraduate Program Director Information:**
Signature_____ Date:_____	Signature Et M.A. Date:_____
Name (please print): _____	Name (please print): Prof. Esther M. Arkin

Academic Mentor/Supervisor Information:	**Site Supervisor Information:**
Signature_____ Date:_____	Signature Et M. Ark. Date:_____
Name (please print): _____	Name (please print): Esther M. Arkin
Title: _____	Title: Professor, Undergraduate Program Director
Department: _____	Company: SBU, AMS Department
Phone: _____	Phone: 631-632-8363
Email: _____	Email: esther.arkin@stonybrook.edu

Note: Submit the completed form with signatures and supporting materials to the UG Director or Coordinator.