**CHEM 4980 SYLLABUS**

**UNDERGRADUATE RESEARCH IN CHEMISTRY (GOODWIN)**

OBJECTIVE: To provide selected undergraduate students with experience in cutting-edge research in biochemistry so that they can gain insight into the research process, and hopefully, become passionate about research.

IMPORTANT

NOTE: This is not a game. This is not a hobby or a side project. This is serious business. You are part of a research team that is currently funded by the National Science Foundation, and we continue to seek additional funding by other agencies (e.g., National Institutes of Health). ***We are counting on you*** to do your best and contribute to the success of the group. We do not expect that you will know everything, or that you will have all the answers, or that all of your experiments will be successful. However, we do expect that you will put in your best effort, *listen* carefully, *learn* the techniques necessary to advance your project, *pay attention*, and do your most careful and excellent work.

HOURS: Arranged (no less than 9 hours per week or at least 3 hours/credit hour). Hours will vary from week to week depending upon your place in your project and the type of project on which you are working. As a general rule, long, contiguous blocks of time are more conducive to productivity than short snippets here and there.

SAFETY: It is essential that everyone is up to date on laboratory safety training, including undergraduate researchers in the lab.  Fortunately, this can be taken care of through on-line resources with our Risk Management and Safety (RMS) office. For us, there are three main safety components which bear on the work we do in the laboratory. Please see that you complete the three training modules.

1) Laboratory Safety

2) Biosafety (we are BSL-1 for the work we do in the lab)

3) rDNA safety

A link to the training resources for all three of these can be found at the RMS webpage.  I have included the URL below.

<https://cws.auburn.edu/rms/training.aspx>

ROOM: Chemistry Building, Room 346

INSTRUCTOR: Dr. Douglas Goodwin

 Chemistry Building Room 179D

E-mail: goodwdc@auburn.edu

 Phone: 4-6944

 Office Hours: By Appointment

GRADING: Lab Work 70%

 Lab Report 30%

 Final Grades will be determined based upon a 10-point scale:

 90 – 100 A

 80 – 89 B

 70 – 79 C

 60 – 69 D

 <60 F

FINAL REPORT: Due on the last day of final exams.

ABSENCES: You are a critical component of a lab team. I expect to be notified in advance if at all possible if you will be unable to work in the laboratory at a time we have arranged.

LAB NOTEBOOK: Your lab work grade (70% of the final grade) will be based in large part on your time in the laboratory, your progress on our agreed upon project, and your laboratory notebook. I expect your notebook to be kept up to date. There will be a title, objective, materials and methods, results, and conclusions/discussion section for each experiment. You will set aside the first few pages of your lab notebook for a table of contents. The laboratory notebook is not to leave the laboratory. When you finish your laboratory experience, your laboratory notebook stays with the Goodwin lab. You are free to make photocopies to take with you, provided they are not part of a proprietary project. To assist you in keeping a proper record of your activities in your lab notebook please see the attached pages from *Fundamental Laboratory Approaches for Biochemistry and Biotechnology*, by Ninfa, Ballou, and Benore.

FINAL REPORT: This is to take on (in many respects) the format of a manuscript for publication. There will be an introduction, materials and methods, results, discussion, references, tables (if applicable), figure legends (if applicable), and figures (if applicable). So that this does not get forgotten until the last minute, you and I need to have our first discussion about the report and the progress of your project in that direction by mid-semester day.