[A-3]COURSE SYLLABUS

1. Course Description (Approximately 100 words)

This course provides experience in selected laboratory procedures. Topics include proper laboratory techniques in biology and chemistry and their uses in the modern biotechnology lab setting. Upon completion, students should be able to perform laboratory techniques and use instrumentation common to basic biotechnology. As a capstone course, students should recognize the interdisciplinary aspects of scientific investigation processes, and be able to apply these scientific skills in their laboratory activities.

2. Course Goals and Objectives (Approximately 100 words)

The purpose of this course is to provide a context for the assessment of Associate in Arts and Associate in Science Program Learning Outcomes. During the course, students will:

a) Articulate discipline-specific concepts and vocabulary and demonstrate empirical and conceptual knowledge foundational to all program disciplines.

b) Demonstrate college-level critical thinking, argumentation, and analysis skills.

c) Construct purposeful and effective written essays and oral presentations that demonstrate an understanding of rhetorical strategies and use experiential evidence and appropriately documented academic research.

d) Demonstrate an awareness and understanding of cultural and social diversity and gain the skills necessary to interact appropriately within diverse environments.

e) Demonstrate an understanding of the scientific method and its application, including interpreting and analyzing scientific data, forming hypotheses, and evaluating experiments

3. Textbook (Title, Author, Publisher, Year of Publication, etc.)

Analytical Biotechnology (Methods and Tools in Biosciences and Medicine) 2002nd Edition by Thomas G.M. Schalkhammer (Editor)

4. Reference

Introduction to Analytical Biotechnology Hardcover – March 1, 2009 by William S. Hancock (Author), C. David Carr (Author), Ira S. Krull (Author)

5. Course Requirements and Grades

examination = 70%
assignment = 10%
C.A.T. = 20%

6. Course Calendar

Week	Main Content
1	CELL DISRUPTION
2	BASICS OF CENTRIFUGATION
3	FILTRATION
4	DARK FIELD MICROSCOPY
5	UV-VISIBLE SPECTROPHOTOMETER
6	RAMAN SPECTROSCOPY
7	C.A.T.
8	ELECTRON SPIN RESONANCE (ESR)
9	AFFINITY CHROMATOGRPHY
10	Electrophoresis
11	Immunological Techniques
12	Tracer techniques
13	ASEPTIC LABORATORY TECHNIQUES
14	EXAMINATION