Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
Submit original form and attachments
Professional Program in Biotechnology

1. This request is submitted by the Department of

2. Course prefix, number and complete title of course:
   BIOT 602 Biotechnology Principles & Techniques II

3. Change requested
   a. Prerequisite(s):
      From: ____________________________ To: ____________________________
   b. Withdrawal (reason): ____________________________
   c. Cross-list with: ____________________________
      Cross-listed courses require the signature of both department heads.
   d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.
   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current catalog course description:

5. Complete proposed course title and proposed catalog course description (not to exceed 50 words):

6. a. As currently in course inventory:
   
   Prefix | Course # | Title (excluding punctuation) |
   ------ | -------- | ----------------------------- |
   BIOT  | 602     | BIOTECH PRIN & TECH II |

   Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | FICE Code | Level |
   ----- | ---- |---- |------------------ |------------- |----------- |------ |
   01    | 09   | 04 | 2612010022350     | 003632      | 5          |

   b. Change to:
   
   Prefix | Course # | Title (excluding punctuation) |
   ------ | -------- | ----------------------------- |
   BIOT  | 602     | BIOTECH PRIN & TECH II |

   Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | FICE Code | Level |
   ----- | ---- |---- |------------------ |------------- |----------- |------ |
   00    | 08   | 04 | 2612010022350     | 003632      | 5          |

   Approval recommended by: ____________________________
   Department Head - Type Name & Sign ____________________________ Date: 1/28/09

   Department Head - Type Name & Sign ____________________________
   (if cross-listed course)
   Submitted to Coordinating Board by: ____________________________
   Date: ____________________________
   Associate Director, Curricular Services

   Questions regarding this form should be directed to Sandra Williams at 845-6201 or sandra-williams@tamu.edu
   Curricular Services - 1208
   1 of 4 B15
PROFESSIONAL PROGRAM IN BIOTECHNOLOGY
BIOTECHNOLOGY PRINCIPLES AND TECHNIQUES II
BIOT 602
TR 1:00-5:00 PM, BICH 243

Course description: Application of basic theories and principles of biotechnology to team and individual research problems in a laboratory setting.

Prerequisites: BIOT 601; graduate classification.

Course objective: This course is designed to provide students with hands-on experience and fundamental knowledge in laboratory principles that builds on experiences from BIOT 601 that will be applied by the students in their independent research projects as part of BIOT 603.

Learning outcomes: In this class, students will develop a fundamental knowledge of laboratory principles and their application in biotechnology. Students will be exposed to methods for the analysis of DNA, RNA, and protein, and gene transformation methods. They will be introduced to bioinformatics and to the use of animals in research. Participation in the laboratory exercises will assist their conceptual learning. After taking this course, students will be to perform basic bioinformatics queries and be aware of RNA and protein sample preparation, quantification and separation methods; use of reporter genes and Agrobacterium for transformation of plant materials; the rules and regulations associated with the use of animals in research; and will receive hands-on training with a selection of laboratory animal species. Students will be able to document their experiments and results following the standard operating procedures for keeping a laboratory notebook. Our goal is that students will be confident in their knowledge of theory and application of these basic laboratory skills so that they can apply them in BIOT 603 or in future industry endeavors.

Instructor information: Clare A. Gill, Associate Professor of Animal Science  
Office: 432B Kleberg  
Office hours: anytime, by appointment  
Phone: 862-7129  
Email: clare-gill@tamu.edu

Required textbook: None. Laboratory protocols and supplementary information will be provided by the instructor. The following are useful reference materials for the class.

Grading policies: Grades will be determined as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab notebook/reports</td>
<td>10 pts./class = 280</td>
<td>56</td>
</tr>
<tr>
<td>Weekly quizzes</td>
<td>10 pts. ea., 14 weeks = 140</td>
<td>28</td>
</tr>
<tr>
<td>Class participation</td>
<td>80</td>
<td>16</td>
</tr>
<tr>
<td>Total possible</td>
<td>500</td>
<td>100</td>
</tr>
</tbody>
</table>

Lab notebook/reports: You will need to purchase a duplicate page laboratory notebook for this class; the duplicate copy is to be turned in for grading. In your notebook you should include all data collected, graphics generated, answers to questions in the protocols or worksheets for an experiment, and conclusions. Your notebook/report grade will reflect the clarity, quality, and completeness of your work.

Weekly quizzes: These will cover preparatory reading material for the current lab plus procedures/techniques completed since the last exam.

Participation: Attendance, level of preparation and lab clean up will be part of this grade. To earn all participation points you must arrive on time and stay until the class is over unless otherwise instructed.

Grades: A final grade of 90-100 % = A, 80-89 % = B, 70-79% = C, 60-69 % = D, below 60% = F.

Late work: One point will be deducted for each day a lab notebook/report is late.


Make-up guidelines: You must have an excused absence in order to make up a lab or lab quiz.

Tentative Laboratory Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 19, 21</td>
<td>Bioinformatics and database analysis</td>
</tr>
<tr>
<td>Jan. 26, 28</td>
<td>Bioinformatics and database analysis</td>
</tr>
<tr>
<td>Feb. 2, 4</td>
<td>Bioinformatics and database analysis</td>
</tr>
<tr>
<td>Feb. 9, 11</td>
<td>Plant experimentation</td>
</tr>
<tr>
<td>Feb. 16, 18</td>
<td>Plant experimentation</td>
</tr>
<tr>
<td>Feb. 23, 25</td>
<td>Plant experimentation</td>
</tr>
<tr>
<td>Mar. 2, 4</td>
<td>Experimental design</td>
</tr>
<tr>
<td>Mar. 9, 11</td>
<td>Experimental design</td>
</tr>
<tr>
<td>Mar. 23, 25</td>
<td>Experimental design</td>
</tr>
<tr>
<td>Mar. 30, Apr. 1</td>
<td>Quantitative PCR</td>
</tr>
<tr>
<td>Apr. 6, 8</td>
<td>Quantitative PCR</td>
</tr>
<tr>
<td>Apr. 13, 15</td>
<td>Quantitative PCR</td>
</tr>
<tr>
<td>Apr. 20, 22</td>
<td>Animal experimentation</td>
</tr>
<tr>
<td>Apr. 27, 29</td>
<td>Animal experimentation</td>
</tr>
<tr>
<td>May 4</td>
<td>Animal experimentation</td>
</tr>
</tbody>
</table>
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