New Course Request

Check Appropriate Boxes:

Undergraduate credit [ ]
Graduate credit [X]
Professional credit [ ]

1. School/Division: College of Liberal Arts & Sciences
2. Academic Subject Code: LBST

3. Course Number: D513
   (must be cleared with University Registrar)

4. Instructor: [Faculty Name]

5. Course Title: Science Elective

   Recommended Abbreviation (Optional) (limited to 32 Characters including spaces)

6. First time this course is to be offered (Semester/Year): Fall 05

7. Credit Hours: Fixed at 3 or Variable from to

8. Is this course to be graded S-F (only)? Yes No

9. Is variable title approval being requested? Yes No

10. Course description (not to exceed 50 words) for Bulletin publication:
    
    Prerequisite: LBST D540
    MLS graduate elective course in the sciences. Topics vary. May be repeated for credit.

11. Lecture Contact Hours: Fixed at 3 hrs/wk or Variable from to

12. Non-Lecture Contact Hours: Fixed at or Variable from to

13. Estimated enrollment: 7-10 of which 100% percent are expected to be graduate students.

14. Frequency of scheduling: every semester Will this course be required for majors? Yes

15. Justification for new course: To provide MLS students with graduate elective options.

16. Are the necessary reading materials currently available in the appropriate library? Yes

17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.

18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by:

[Signature] [Date] Department Chairman/Division Director

Approved by:

[Signature] [Date] Dean

Dean of Graduate School (when required) [Signature] [Date]

Chancellor/Vice-President [Signature] [Date]

University Registrar [Signature] [Date]

After School/Division approval, forward the last copy (without attachments) to the University Registrar for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.
Attached is a sample syllabus for LBST 513 Science Elective: Clinical Biotechnology. This is one way the course could be taught. For graduate credit, students must fulfill additional course requirements not required of undergraduates. These include the following:

- **Required reading list (see sample syllabus for D513)**
  - Required reading includes a broad range of material to add a greater depth of understanding of clinical biotechnology and its role in medicine.
    - Basic background in clinical chemistry
    - In depth look at role of antibodies is diagnostics
    - In depth look at blood coagulation, and biotechnology approaches to reducing blood coagulation as a prevention of stroke and myocardial infarction
    - Safety issues in handling blood and other biological specimens
    - Use of DNA-technology in rapid diagnosis of diseases
    - Applications of biotechnology in detection of bioterrorist materials
    - Prevalence, diagnosis, treatment and disease management of diabetes
    - Basic role of FDA in approval of biotechnology applications, point-of-care devices, and procedures for obtaining approval of new clinical technologies
  - Other readings to supplement and provide depth to topics addressed in the undergraduate course
  - Written responses of the reading will be graded and applied towards the course grade (see sample syllabus for D513)

- ** Longer term paper (~7500 words vs. 5000 words for undergraduates) (see sample syllabus for D513)**
  - Term paper topic covers a human disease, its symptoms, detection, and treatment, with special emphasis on the recent clinical biotechnology that is involved in managing the disease.
  - Our intent is to grade these term papers using higher writing standards (clarity, organization, construction, and technical accuracy) than for undergraduates, in order to reflect the advanced education and writing experience of graduate students.
SAMPLE SYLLABUS
Clinical Biotechnology
LBST D513

Instructors: Gretchen Anderson 041 Northside 520-4820 ganderso@iusb.edu
         David Carville 0049A Northside 520-4829 dcarvill@iusb.edu
         Kirk Guyer 0049A Northside 520-4829 kguyer@iusb.edu

Lecture:  Monday 5:30-8:00 pm
Laboratory: Monday 8:00-9:30 pm

Background required: No prerequisites.

Course objectives: The purpose of this course is to introduce MLS graduate students to the chemistry that occurs behind-the-scenes at hospitals and clinics, the role of chemical tests in disease diagnosis, treatments, drug design, and in monitoring the efficacy of treatments. New approaches to instrumentation and design of products will be introduced. In addition, careers in the biotechnology/pharmaceutical industry and the clinical laboratory will be discussed as will the writing of theses and research papers.

Course structure: The course consists of lectures, laboratory experiences, computer graphics and computer searches for relevant information, and a field trip to a traditional reference laboratory for exposure to toxicology and clinical chemistry laboratories. There will be weekly short quizzes, midterm and final exams, laboratory instruction with questions and a term paper. There will also be required reading - a list of references is attached (it will be up to the student to research this material).

Grades will consist of weekly short quizzes (about 10 minutes each), laboratory participation and write-ups (to include questions to be answered from review papers related to the laboratory), a term paper, a midterm exam and a final exam.

The quizzes will be short answer and/or multiple choice which will cover material covered the previous week. No quizzes may be dropped for any reason and there will be no make-up quizzes. If you cannot take the quiz, please advise an instructor at least 24 hours in advance. Exams will also consist of short answer, multiple choice, and short essay questions. If you cannot make it to the exam, call one of the instructors at least 24 hours before the exam, and arrangements will be made for a make-up exam.

The term paper should be a 10-15 page (~7,500 word) report describing a disease and the diagnosis (with emphasis on which chemical tests lead to the diagnosis and the overall basis of the clinical tests). The writing style and technical level should be aimed towards interested laypersons (much as Time Magazine, US News and World Reports, etc. would cover the topic). The term paper should include references (a minimum of ten) as per the scientific reference system.
The laboratory portion of the course will consist of the types of chemical tests currently used in clinics and hospitals. The laboratory grade will consist of participation in post-lab discussions of results and short reports that answer specific questions. The lab reports must be handed in the week following the laboratory experiment.

**Grades:**

Grades will be composed of the following:

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As per an edict by the University -

'Any student who feels that an accommodation may be needed based on the impact of a disability should contact Disabled Student Services at 520-4135 in office 143 of the Administration Building. Staff will work to coordinate reasonable accommodations for students with documented disabilities.'

Also as per University Policy -

With regard to the term paper – plagiarism will not be accepted in any form. Any papers submitted with plagiarized material will receive an automatic F grade for the class.
Required Reading -

1. Clinical Chemistry; a Fundamental Textbook
   Calbreath, DF. WB Saunders Co. ISBN:- 0-7216-2621-1 (on hold in library)

2. American Red Cross – Bloodborne Pathogens Training: preventing disease
   transmission. ISBN 1-58480-167-0.


   2000;111:733.


   Academy of Clinical Biochemistry Standards of Laboratory Practice:
   recommendations for the use of cardiac markers in coronary artery diseases. Clin
   Chem 1999 Jul;45(7):1104-1121.


8. Moeller MR, Kraemer T. Drugs of abuse monitoring in blood for control of
   driving under the influence of drugs. Ther Drug Monit. 2002;Apr.24(2):210-221.

9. Tetin SY, Stroupe SD. Antibodies in Diagnostic Applications. Current

10. Bos NA, Carville DGM, McLinden JH. Antigen-free technology. IVD technology
    1996;2:30-38.