APPLICATION FOR NEW COURSE

1. College of Allied Health Professions  
   Date 9/25/01
   Department/Division offering course: Clinical Sciences/Clinical Laboratory Sciences

2. Proposed designation and Bulletin description of this course:
   a. Prefix and Number CSC 615  
   b. Title*Repro Lab Sci (RLS)

   *NOTE: If the title is longer than 24 characters (including spaces), write a sensible title (not exceeding 24 characters) for use on transcripts

   c. Lecture/Discussion hours per week 1  
   d. Laboratory hours per week 0

   e. Studio hours per week n/a  
   f. Credits 1

3. Course Description  
   The course includes basic cell biology and principles of genetics; a review of the male reproductive system including hormonal control, early development, spermatogenesis and fertilization; a review of the female reproductive system including hormonal control, early development, oogenesis, the menstrual cycle, fertilization and early implantation.

4. Prerequisites (if any) none

5. May be repeated to a maximum of N/A (if applicable).

6. To be cross-listed as
   Prefix & No.  
   Signature, Chairman, cross-listing department

7. Effective Date: Summer, 2002 (semester and year)

8. Course to be offered (distance learning) Fall x Spring x Summer x

9. Will the course be offered each year? Yes x No
   (Explain if not annually)

10. Why is this course needed? Requirement for the Reproductive Laboratory Science (RLS) track in the Master of Science in Clinical Science.

11. a. By whom will the course be taught? Doris J. Baker, Ph.D.

12. b. Are facilities for teaching the course now available? Yes x No__
    If not, what plans have been made for providing them?
10. What enrollment may be reasonably anticipated? 15

11. Will this course serve students in the Department primarily? Yes x
   No
   Will it be of service to a significant number of students outside the Department? Yes
   No x
   If so, explain

   Will the course serve as a University Studies Program course? Yes
   No x
   If yes, under what Area?

12. Check the category most applicable to this course
   □ traditional; offered in corresponding departments elsewhere;
   □ relatively new, now being widely established
   □ not yet to be found in many (or any) other universities

13. Is this course part of a proposed new program? Yes x
    No
    If yes, which?

14. Will adding this course change the degree requirements in one or more programs? Yes x
    No
    If yes, explain the change(s) below. Requirements for Reproductive Laboratory Science
    (RLS) track in the Master of Science in Clinical Science will change. The addition of
    this, and other distance learning courses, will make the program more accessible and
    increase student enrollment.

15. Attach a list of the major teaching objectives of the proposed course and outline and/or
    reference list to be used.

Objectives: By the end of the course, the student will demonstrate that he/she will/can:
- Define the basic structure and function of the cell.
- Describe the function of eukaryotic cellular organelles
- Describe the membrane fluid mosaic model and list functions of proteins and
  carbohydrates found on the cell membrane.
- Distinguish glycolysis from the complete breakdown of glucose in the Krebs Cycle and
  the Electron Transport Chain (discuss total energy derived from each).
- Distinguish diffusion, facilitated diffusion, osmosis and active transport.
- Give the general properties of prokaryotic and eukaryotic cells. Give examples of each.
- Discuss the levels of organization in multicellular organisms
- Project numbers and types of organelles for specialized cell (e.g. hepatocyte or spermatozoa)
- Fully describe meiosis and describe why meiosis is a “reduction” division.
- Compare and contrast mitosis and meiosis.
- Describe the lactose inducer as a means of cell regulation.
- List ways gene expression may be regulated in eukaryotes.
- Distinguish pre-mRNA and mRNA. Describe how these differences may be a way to regulate gene expression in eukaryotes.
- Define cell signaling and give examples.
- Describe: gap junctions, occludens junctions and adherens junctions.
- Describe the function of eukaryotic cellular organelles.
- Detail the steps involved in transcription and translation.
- Beginning with mRNA, outline the steps involved in the synthesis of a protein.
- Demonstrate an understanding of the anatomy and physiology of the male reproductive system.
- Fully describe spermatogenesis and distinguish spermatogenesis and spermiogenesis.
- Demonstrate an understanding of the anatomy and physiology of the female reproductive system.
- Explain hormonal control of spermatogenesis, oogenesis, ovulation and implantation.
- Describe the sequential steps leading to fertilization (capacitation, zona binding, acrosome reaction).
- Demonstrate an understanding of the anatomy and physiology of the early embryo.

16. If the course is a 100-200 level course, please submit evidence (e.g., correspondence that the Community College System has been consulted. N/a

17. Within the Department, who should be contacted for further information about the proposed course?

   Name  Doris J. Baker, Ph.D.  Phone Extension 323-1100 ext. 241

*NOTE: Approval of this course will constitute approval of the program change unless other program modifications are proposed.
Signatures of Approval:

Department of Chair: ___________________________________________ Date: ____________________________

Dean of the College: ___________________________________________ Date: ____________________________

Date of Notice to the Faculty: ____________________________

*Undergraduate Council: _______________________________________ Date: ____________________________

*University Studies: __________________________________________ Date: ____________________________

*Graduate Council: __________________________________________ Date: ____________________________

*Academic Council for the Med Center: _________________________ Date: ____________________________

*Senate Council: ____________________________________________ Date: ____________________________

Date of Notice to Univ. Senate: ____________________________

*If applicable, as provided by the Rules of the University Senate

ACTION OTHER THAN APPROVAL: