Lane Community College

**Revision in credits /Contact Hours**

## Section 1. Proposal Information

**Course Developer: Christine Andrews**

Date: *10/2/2012*

Catalog year to take effect : 2013-2014

**Type of Proposal**

X Revised course

☐ 199 Special Studies

☐ 299 Trends

**Type of Course:**

☐ Lower Division Collegiate (transfer)

☐ Professional/Technical (program requires)

☐ Professional/Technical (stand-alone)

☐ Developmental, numbered below 100

## Rationale:

**How does this proposal further the goals of the program or department?** Since BI 112 was first introduced as a prerequisite to the Anatomy and Physiology series offered at LCC there has been an increase in material that we are being asked to cover as well as a change in the student population. One of the main goals of the BI 112 classes is to give students the Cell Biology background needed to succeed in the Anatomy and Physiology sequence and ultimately in their classes/careers in health professions. As the course stands now (3 credits) we are covering the material too quickly and for most students only superficial learning is occurring. By increasing to 4 credits we hope to allow the students more time to really understand the material and to increase our emphasis on critical thinking, which is so important in the Health Professions.

Converting BI 112 to 4 credits also will keep it more in line with the other 100 level biology courses offered at LCC. Currently BI 112 covers as much (if not more) material as other 100 level Biology classes but is worth 1 less credit. All biology courses at LCC and most at other Oregon colleges and universities are either 4 or 5 credits. This makes transferring the 3 credit BI 112 difficult. Increasing the course to 4 credits will allow students who do not continue on in one of the health careers offered here at LCC to more directly transfer BI 112 as a cell biology class to other schools.

Increasing BI 112 credits will also allow us to consolidate the teaching of the genetics requirement for the OCNE nursing programs into one class (BI 112). Currently the nursing genetics requirement is spread between BI 112 and BI 233 making tracking difficult. If the conversion goes through BI 112 will cover cellular genetics and inheritance patterns (BI 233 will no longer cover inheritance patterns).

**What evidence supports this proposal?** The division, students and faculty all support the change from 3 to 4 credits for BI 112. We have surveys from several quarters showing that students and faculty feel the class should be 4 credits. The students taking, as well as the faculty teaching, BI 112 all agree that the workload for BI 112 is equivalent to other 4 credit courses in Science. A survey of 132 BioBonds students last year revealed that students in BI 112 overwhelmingly support the 3 to 4 credit conversion. One of the major reasons students gave for supporting the change, besides workload which was number one, was that with CH 112 and BI 112 being 3 credits each they have to take 2 additional classes to get their maximum financial add. Converting CH 112 and BI 112 to 4 credits each they will only have to take one additional class, which will increase their success in all their classes that term. As stated above converting BI 112 will make the class more easily transferable to other institutions for those students who either do not get into or choose not apply to one of the Health Professions Programs here at LCC.

**(New courses) How do you know there is a demand for this course?**

## PREVIOUS Catalog/Course Information:

Course Number: **BI 112** Course Title in Banner: **Cell Bio for Health Occupations** (30 characters maximum)

Full Course Title in print catalog: **Cell Biology for Health Occupations**

Prerequisites: **none** Co-requisites: **CH 112**

Grade Option: X Graded (with P/NP option) ☐ Pass/No Pass only

| Number / Type Credits | Term Minimum Contact | Term Maximum Contact | 11-Week Term Contact |
|---|---|---|---|
| 2 Lecture | 20 hours (lecture credits x 10) | 24 hours (lecture credits x 12) | 22 hours (lecture credits x 11) |
| 1 Lec/Lab | 20 hours (lec-lab credits x 20) | 24 hours (lec-lab credits x 24) | 22 hours (lec-lab credits x 22) |
| Lab | hours (lab credits x 30) | hours (lab credits x 36) | hours (lab credits x 33) |
| 3 **Total credits (sum)** | 40 **Total hours (sum)** | 48 **Total hours (sum)** | 44 **Total hours (sum)** |

**What will change in this course as a result of changing the credits?**

X Course Description X Course Outline X Contact Hours

X Course Outcomes ☐ Other (explain): _____

**Section 2. Proposed Course Outline** (A general statement of course content that informs class syllabus construction.)

Course Number: **BI112** Course Title for Banner: **Cell Bio for Health Occupations** (30 characters maximum)

Full Course Title for print catalog: **Cell Biology for Health Occupations**

Prerequisites: **none** Co-requisites: **CH112**

Grade Option: X Graded (with P/NP option) ☐ Pass/No Pass only

| Number / Type Credits | Term Minimum Contact | Term Maximum Contact | 11-Week Term Contact |
|---|---|---|---|
| 3 Lecture | 30 hours (lecture credits x 10) | 36 hours (lecture credits x 12) | 33 hours (lecture credits x 11) |
| _ Lec/Lab | ___hours (lec-lab credits x 20) | __ hours (lec-lab credits x 24) | ___hours (lec-lab credits x 22) |
| 1 Lab | 30 hours (lab credits x 30) | 36 hours (lab credits x 36) | 33 hours (lab credits x 33) |
| 4 **Total credits (sum)** | 60 **Total hours (sum)** | 72 **Total hours (sum)** | 66 **Total hours (sum)** |

**Original Course Description:**
Introduction to human cell structure, function, respiration and division. Includes genetic concepts of DNA replication, protein synthesis, genes and inheritance. Laboratory skills: use of microscopes, identification of cell structures. With CH 112, the prerequisite for BI 231 Human Anatomy and Physiology 1.

**New Course Description (1000 character limit):**
Introduction to human cell structure, function, respiration and division. Includes genetic concepts of DNA replication, protein synthesis, genes and inheritance. Laboratory skills: use of microscopes, identification of cell structures. With CH 112, the prerequisite for BI 231 Human Anatomy and Physiology 1.

**Original Course Outcomes and Proficiencies**

What did the student ***know,*** what could the student ***do*** at the end of the course**,** or what ***attitudes*** related to the subject would the student hold?

**Upon successful completion of this course, the student:**

A. Properly and effectively use a microscope to observe and measure prepared sides, cells and living organisms.

B. Describe and model the processes of cell growth and division including how the process is regulated and consequences of the loss of regulation.

C. Relate the structure of DNA to its replication, role in protein production, and importance in human genetics and diseases.

D. Explain how animal cells acquire and use energy and how this process is regulated.

E. Outline the structures of a cell and describe the function of each.

**Assessments Used**

What evidence did you gather that students have achieved course outcomes? (assessment tools include departmental tests, written products, portfolios, juried performances, quizzes and exams, or alternative assessments such as qualitative studies, capstone projects, external reviewers, etc.)

**How each outcome was assessed:**

A. Exams, Lab assignments, and portfolios

B. Exams, Lab assignments, and portfolios

C. Exams, Lab assignments, and portfolios

D. Exams, Lab assignments, and portfolios

E. Exams, Lab assignments, and portfolios

F. Summarize how cells respond to and communicate with the external environment.

## New Course Outcomes and Proficiencies

What will the student ***know*** or ***be able to do*** at the end of the course**,** or what ***attitudes*** related to the subject will the student hold?

## Assessments Planned

What evidence will you have that students have achieved course outcomes? (assessment tools may include departmental tests, written products, portfolios, juried performances, quizzes and exams, or alternative assessments such as qualitative studies, capstone projects, external reviewers, etc.)

## Upon successful completion of this course, the student will:

## How each outcome will be assessed:

A. Properly and effectively use a microscope to observe and measure prepared sides, cells and living organisms.

A. Exams, Lab assignments, and portfolios

B. Describe and model the processes of cell growth and division including how the process is regulated and consequences of the loss of regulation.

B. Exams, Lab assignments, and portfolios

C. Relate the structure of DNA to its replication, role in protein production, and importance in human genetics and diseases. ***Predict human inheritance patterns based on cellular genetics.***

C. Exams, Lab assignments, and portfolios

D. Explain how animal cells acquire and use energy and how this process is regulated.

D. Exams, Lab assignments, and portfolios

E. Outline the structures of a cell and describe the function of each.

E. Exams, Lab assignments, and portfolios

F. Summarize how cells respond to and communicate with the external environment.

F. Exams, Lab assignments, and portfolios

G. ***Evaluate the role of emerging genetic technologies on human health care.***

G. Exams, Lab assignments, and portfolios

## Original Course Content by Major Topics

What topics were originally presented? What were the main activities of the course? What were the central themes?

Microscope Use

Cells
- Properties of Life
- Cell Structure
- Cell organelles

Cell Division
- Mitosis
- Meiosis
- Cell Cycle Regulation
- Cancer

DNA
- Structure
- Function
- Replication

Protein Synthesis
- Transcription
- Translation
- Protein Folding
- Mutations

Cellular Metabolism
- Aerobic and Anaerobic respiration
- Utilization of Glucose

Role of Insulin
Membrane Transport
Membrane properties
Passive, Active and Bulk Transport
Transport of Glucose

## New Course Content by Major Topics

What topics will be presented? What are the main activities of the course? What are the central themes?
(See sample at http://www.lanecc.edu/cops/format3.htm.)

Microscope Use

Cells

Properties of Life
Cell Structure
Cell organelles
Cell Division
Mitosis
Meiosis
Cell Cycle Regulation
Cancer
DNA
Structure
Function
Replication
Protein Synthesis
Transcription
Translation
Protein Folding
Mutations
Cellular Metabolism
Aerobic and Anaerobic respiration
Utilization of Glucose
Role of Insulin
Membrane Transport
Membrane properties
Passive, Active and Bulk Transport
Transport of Glucose

***Human Inheritance Patterns***
***Dominant vs Recessive Inheritance Patterns***
***Non-Mendellian Inheritance Patterns***
***Interactions between Genetics and the Environment***

***Genetics Technologies in Health Care***
***Human Genome Project***
***Gene Therapy***
***Genetic Testing***
***Ethics***

## Section 3. Curriculum Equity (http://www.lanecc.edu/cops/curric.htm)

To promote an environment where all learners are encouraged to develop their full potential, this course will support Lane's Curriculum Equity policy in the following way(s):

Including content by and about culturally and ethnically diverse people in course syllabi, teaching methodology and evaluation practices whenever feasible;

Portraying women and men from diverse cultural and ethnic backgrounds in a wide range of roles;

Using gendered examples equally when illustrating theories and concepts;

Using class material which assists students in clearly recognizing and accepting basic similarities among all members of the human race as well as the uniqueness and worth of every individual. Examples of such material could include diverse individuals regardless of race, gender, age, religion, disability, national origin, marital status, or class background.

## Section 4. Required Signatures

### Library Impact Statement

Under accreditation standards, Library consultation is essential for new programs, new courses and for substantively revised courses when the revisions entail any change in library use.

**What assignments will require the use of library and information resources?**
**None**

Each academic area has a Liaison Librarian (http://www.lanecc.edu/library/liaison.htm) to help faculty identify materials to be ordered to support the curriculum. Make an appointment with the designated librarian to discuss the library needs of your course at least a week ahead of the deadline for submission.

**To be completed by Liaison Librarian:**

☐ Library resources are adequate to support this proposal.
☐ Additional resources are needed but can be obtained from current funds.
☐ Significant additional Library funds/resources are required to support this proposal.

_____ _____
Liaison Librarian Date

### Divisional Approvals

**Human, Physical, and Financial Resources (select one):**

☐ Additional instructional costs (staff, materials, services or facilities) will be incurred to offer this course. Source of funding: _____
☐ No additional instructional resources (staff, materials, services or facilities) are needed to offer this course.
Explain: _____

**Divisional Recommendation (select one):**

☐ The Division Chair and Administrative Assistant have reviewed this course proposal and kept a copy for divisional files.
☐ Faculty review of this course was completed within the division on _____(date).
☐ New course outlines have been prepared for the Divisional binder containing all current course outlines.

**Fees (select one):**

☐ We have completed a fee request form to be submitted to ASA upon course approval.
☐ No special fees will be required for this course.

**Required Certifications:**

☐ We have developed minimum course certification standards for this course to be filed with ASA to allow compliance with the faculty contract.
☐ We have completed faculty certification form(s) (http://www.lanecc.edu/cops/faccertf.pdf ) for this course to be filed with ASA and Human Resources so RIF grid information will be updated.

**Divisional Recommendation (select one):**

☐ Pass ☐ Do Not Pass

_____ _____
Office Administrator Date

_____ _____
Division Chair Date

### College Approval

_____ _____
Curriculum Committee Chair Date

_____ _____
Executive Dean for Academic Affairs Date

Curriculum Approval Committee hearing: _____
Date

_____ _____
Vice President for Academic Affairs & Chief Academic Officer Date