LS→

MODERN GENETICS AND SOCIETY

LSC Use Only
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Senate App 4/2/02

CURRICULUM PROPOSAL COVER SHEET
University-Wide Undergraduate Curriculum Committee

I. CONTACT

Contact Person Robert Hinrichsen Phone 357-2706

Department Biology

II. PROPOSAL TYPE (Check All Appropriate Lines)

X COURSE _____ (Suggested 20 character title)

X New Course* BIOL 113 Genetics in Modern Society (Course Number and Full Title)

___ Course Revision _____ (Course Number and Full Title)

X Liberal Studies Approval + for new or existing course BIOL 113 Genetics in Modern Society (Course Number and Full Title)

___ Course Deletion _____ (Course Number and Full Title)

___ Number and/or Title Change _____ (Old Number and/or Full Old Title)

_____ (New Number and/or Full New Title)

___ Course or Catalog Description Change _____ (Course Number and Full Title)

___ PROGRAM: ___ Major ___ Minor ___ Track

___ New Program* _____ (Program Name)

___ Program Revision* _____ (Program Name)

___ Program Deletion* _____ (Program Name)

___ Title Change _____ (Old Program Name)

Rec'd FEB 28 2002

Rec'd MAR 12 2002 LIBS

Rev.

Department Curriculum Committee

Department Chair

College Curriculum Committee

College Dean

+Director of Liberal Studies (where applicable) 2-21-02

*Provost (where applicable)

Part II. Description of Curricular Change

1. Syllabus of Record

I. Catalog Description

BIOL 113 Genetics in Modern Society 3 class hours 0 lab hours 3 semester hours (3 c-0l-3sh)

Prerequisite: Non-biology majors and non-biology minors only.

Intended primarily to provide the student with an appreciation and comprehension of the field of genetics as it applies to the human condition. The course introduces the topic of human heredity as a means to understand genetic disorders, genetic therapies and alternative reproductive strategies. It provides an introductory background of the field of genetics and current biotechnology related to genetics, which is suitable for non-majors. Using this background, the student will be presented with the most recent events in the field of human genetics and its effect on society.

II. Course Objectives

As a result of this course, the student will:

(A) understand the basic principles of genetics required to appreciate and judge modern genetic advances
(B) recognize the importance of modern genetic advances in the treatment of human diseases
(C) be able to appreciate the importance of the human genome project and its effect on medicine and society as a whole
(D) demonstrate his/her knowledge of human genetic diseases
(E) understand the consequences of the new genetics on human reproduction and genetic therapies
(F) become knowledgeable of the field of medical bioethics and understand its role in the decisions that will be made concerning the field of human genetics

III. Course Outline

This course will be arranged into four sections. The first section will cover the basic background material that the non-biology major will require in order to comprehend and evaluate the topics covered in the remainder of the course. This will include material on human cells, human development and basic Mendelian genetics. The second section will cover DNA, DNA technology and their applications to the Human Genome Project. This section will give them the basic information required to understand the work that is being done in molecular genetics and how it can be used to manipulate genetic material. This will be followed by a discussion of the human genome project- how it was accomplished, why it was attempted and what can be done with the information. The third section will cover a series of genetic diseases in humans. For example, the genetics and new biological understanding of Alzheimer's disease and cystic fibrosis will be discussed. This will enable the student to appreciate the genetic nature of these diseases and how the new genetics offers possible therapies. The final section will cover the use of the new genetic technologies in cloning, genetic therapy and novel reproductive strategies. The purpose of

this section will be to inform the students of these new disciplines, as well as allow them to evaluate their use in society as a whole.

The following outline for the course is based on a fourteen-week semester with three 1.0-hr class meetings per week. This includes one meeting during Finals Week in order to give the final exam. This will give a total of 43 class meetings. In the outline below, an individual line does not necessary correspond to a single class meeting.

Topical Outline: BIOL 113 Genetics in Modern Society

Topics and Activities for Section One: Background to Human Genetics

Class Meetings 1-9:

Lecture 1- An introduction to the field of genetics
Lecture 2- The human cell- what makes it function?
Lecture 3- The use of stem cells in genetic therapies- class discussion of articles on ethical issues
Lecture 4- The development of a human from the fertilized cell to birth- Video- The Journey of Life
Lectures 5 and 6- Mendelian genetics- how are individual genes transmitted
Lecture 7- A correlation of what Mendel found to the heredity of human characteristics
Lecture 8- Human pedigrees- what are they and how are they used
Lecture 9- Chromosomes- the human karyotype- slide presentation of chromosomal abnormalities in humans

Class Meeting 10- Exam One

Topics and Activities for Section Two: DNA, Biotechnology and the Human Genome

Class Meetings 11- 20:

Lecture 11 and 12- DNA molecules- Video- Modern Genetics
Lectures 13 and 14- Methods of manipulating genes
Lectures 15 and 16- The cloning of a human gene- the cystic fibrous gene
Lecture17 and 18- The use of transgenic animals
Lectures 19 and 20- The use of DNA technology in forensics- Video- Applied Genetics (from the Biology Concepts Series)

Class Meeting 21- Exam Two

Topics and Activities for Section Three: Genetic Diseases, Aging and Behavior

Class Meetings 22- 32:

Lecture 22- Alzheimer's disease
Lecture 23- Muscular Dystrophy
Lectures 24 and **25-** The genetics of cancer
Lecture 26- Breast cancer
Lectures 27 and 28- Prions and Mad Cow Disease- is it a genetic disease? Video- Nova Series- The Brain Eater

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Lectures 29 and 30- The genetics of aging

Lectures 31 and 32- The genetics of behavior

Class Meeting 33- Exam Three

Topics and Activities for Section Four: The Use of the New Genetic Technology

Class Meetings 34-42

- **Lectures 34, 35 and 36-** Human cloning- techniques involved in cloning higher organisms
- **Lecture 37-** Human cloning- a classroom discussion of the ethical issues surrounding this technique
- **Lectures 38, 39-** Gene therapy
- **Lectures 40-** Classroom discussion of the ethics of genetic therapies
- **Lectures 41 and 42-** Reproductive strategies using the new genetics

Class Meeting 43- Final Exam

IV. Evaluation Methods

The students in this class will be evaluated by several methods- written examinations that cover material from the textbook and lecture, a series of short writing assignments throughout the semester, and participation in a series of classroom discussions on selected topics.

A. Types of Evaluations

1. Written examinations (60% of grade)

There will be four written examinations (15% of total grade for each exam) during the semester. The final examination, during finals week will not be comprehensive. Each examination will be weighed equally. The examinations will be composed of between 4 and 7 essay questions that cover material from the textbook, assigned readings and lecture material.

2. Short writing assignments (30% of grade)

There will be a series of 6 short writing assignments required by each student during the semester (each will be worth 5% of the total grade). Each assignment will be weighed equally in the final grade. Several readings from selected journal articles or Internet sites will be assigned. The student will be expected to write a short paper (approximately 500 words) that summarize and critique the work. The intent of these assignments is to read material on timely subjects and be able to formulate and express their opinions on the subject.

3. Class participation (10% of grade)

The students will be expected to contribute to classroom discussions throughout the semester. There will be many times when a topic will be discussed as a group; these will include topics that are relevant to

today's society. The supplemental readings will be a part of this section of the course. For example, one discussion will center on a series of hypothetical case studies of human cloning from the supplemental reading entitled Who's Afraid of Human Cloning? The students, working in groups, will be asked to

give their opinions on several of the cases presented in the reading. Each student will be required to contribute to these discussions. The instructor will keep a participation log during the semester in order to monitor each student's activity.

B. Grade Breakdown

1. Exams (four with each worth 15%)	60%
2. Written assignments (a total of 6)	30%
3. Class participation (including supp. Readings)	10%

C. Grade Scale

A = 90 – 100%, B = 80 – 89%, C = 70 – 79%, D = 60 – 69%, F = below 60%

V. Required Textbook, Supplemental Books and Readings

A. Textbook:

Human Genetics: Concepts and Applications by Ricki Lewis, 2001, McGraw Hill, Boston

B. Non-Textbook Readings (Required):

Mapping Fate: A Memoir of Family, Risk and Genetic Research by Alice Wexler 1996. University of California Press.

The Century of the Gene by Keller-Fox, Evelyn. 2001. Harvard University press, Boston.

C. Supplemental Readings

Unraveling Genes: A Layperson's Guide to Genetic Engineering by Mark Walker and David McKay, 2000, Allen and Unwin Press, St. Leonards, Australia.

Who's Afraid of Human Cloning? By Gregory E. Pence, 1998, Rowman & Littlefield Publishers, Maryland.

Genethics: The Clash Between the New Genetics and Human Values by David Suzuki and Peter Knutdsen. 1990. Harvard University Press, Boston.

Early Life by Lynn Margulis. 1982. Jones and Bartlett Publishers.

Deadly Feasts: The Prion Controversy and the Public Health by Richard Rhodes. 1998. Touchstone Books.

Cloning: Responsible Science or Technomadness? Ed. Michael Rose and Aryne Shipper. 2001. Prometheus Books.

D. Videos

"Applied Genetics" from the Biology Concepts: Genetics series 1997. This video looks at the ethical aspects of genetic profiles and engineering, cloning and law enforcement uses of DNA.

"Modern Genetics" from the biology concepts: Genetics series, 1997. This video discusses the discoveries leading to modern genetics including the location of genes, chromosomes and the structure of DNA.

"Journey into Life: The Triumph of Creation" A Questar Video. This award winning video that illustrates human development from the time of conception to birth.

E. Useful Websites

Alzheimer's Association www.alz.org

Mendelian Inheritance in Man www.ncbi.nih.gov/omin/searchomin

National Human Genome Research Institute www.nhgro.nih.gov

National Society of Genetic Counselors www.nsgc.org

Huntington Disease Society of America www.hdsa.mgh.harvard.edu

MendelWeb ftp.netspace.org/MendelWeb/Mendel.htm

National Down Syndrome Society www.ndss.org

Cystic Fibrosis Foundation www.cff.org

American Cancer Society www.cancer.org

National Breast Cancer Coalition www.natlbcc.org

National Cancer Institute nci.nih.gov

Resolve: The National Infertility Association www.resolve.org

Assisted Reproductive Technologies www.phppo.cdc.gov/dls/art/art.asp

Celera Genomics Corp. www.celera.com

VI. Special Resource Requirements

Students will only be expected to supply the textbook and required non-textbook reading material. No other materials or equipment will be required for the course.

VII. Bibliography

Access to the Genome: The Challenge to Equality by Maxwell J., Mehlman, Jeffrey, R. Botkin April 1998. Georgetown Univ Pr.

Human Natures: Genes, Cultures, and the Human Prospect 2000. by Paul R. Ehrlich Island Press – California.

Human Molecular Genetics by Tom Strachan, Andrew P. Read 2nd edition (December 15, 1999) John Wiley & Sons.

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Cracking the Genome : Inside the Race to Unlock Human DNA by Kevin Davies 2001. Free Press.

Abraham Lincoln's DNA and Other Adventures in Genetics by Philip R. Reilly 1 edition (August 2000) Cold Spring Harbor Laboratory Press.

Altered Fates : Gene Therapy and the Retooling of Human Life by Jeff Lyon, Peter Gorner 1996. W.W. Norton & Company.

Amazing Schemes Within Your Genes by Fran, Dr. Balkwill 1994. First Avenue Editions.

Approaches to Gene Mapping in Complex Human Diseases by Jonathan L. Haines (Editor), Margaret A. Pericak-Vance (Editor) 1st edition 1998. Wiley-Liss.

Are We Hardwired? : The Role of Genes in Human Behavior by William R. Clark, Michael Grunstein 2000 Oxford Univ Pr.

Assessing Genetic Risks : Implications for Health and Social Policy by Lori B. Andrews (Editor), Jane E. Fullarton, Neil A. Holtzman, Arno G. Motulsky (Editor) 1994) National Academy Press.

Biologic Variation in Health and Illness : Race, Age, and Sex Differences by Theresa Overfield, Theresa Cverfield 2nd edition 1995. CRC Pr.

Bodies in Glass : Genetics, Eugenics, Embryo Ethics by Deborah Lynn Steinberg 1997. Manchester Univ Pr.

Born That Way: Genes, Behavior, Personality by William Wright1998. Knopf.

Brave New Worlds: Staying Human in the Genetic Future by Bryan Appleyard 1998 Unknown.

Clones and Clones: Facts and Fantasies About Human Cloning by Martha C. Nussbaum (Editor), Cass R. Sunstein (Editor) 1999) W.W. Norton & Company.

Clones, Genes, and Immortality: Ethics and the Genetic Revolution by John Harris 1998) Oxford Univ Press.

The Clone Age: Adventures in the New World of Reproductive Technology by Lori B. Andrews. 1999. Henry Holt & Company, Inc.0804

Code of Codes: Scientific and Social Issues in the Human Genome Project by Daniel J. Kevles (Editor), Leroy Hood (Editor) 1993. Harvard Univ Pr.

Cracking the Genome: Inside the Race to Unlock Human DNA by Kevin Davies 2001. Free Press.

Current Perspectives in Genetics: Insights and Applications in Molecular, Classical, and Human Genetics by Shelly Cummings 1997. Wadsworth Pub Co.

Designing Babies: The Brave New World of Reproductive Technology by Roger Gosden 1999. W H Freeman & Co.

DNA and Destiny: Nature and Nurture in Human Behavior by R. Grant Steen 1996.Perseus Pr.

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DNA Fingerprinting by J. Schmidtke, Michael Krawczak 2nd edition 1999. Springer Verlag.

Engineering the Human Germline: An Exploration of the Science and Ethics of Altering the Genes We Pass to Our Children by Gregory Stock (Editor), John Campbell 2000. Oxford Univ Press.

Experiencing the New Genetics: Family and Kinship on the Medical Frontier by Kaja Finkler 2000. University of Pennsylvania Press.

From Chance to Choice: Genetics and Justice by Allen Buchanan, Dan W. Brock, Norman Daniels, Daniel Wikler, Daniel I. Wilker 2000. Cambridge Univ Pr (Trd)

The Genetic Basis of Human Cancer by Bert Vogelstein (Editor), Kenneth W. Kinzler (Editor) 1st edition 1998. McGraw Hill Text.

Genetic Knowledge: Human Values and Responsibility by Jacquelyn Ann K. Kegley (Editor), International Conference on the Unity of the 1998. Icus Books.

Genetic Medicine: A Logic of Disease by Barton, M.D. Childs 1st edition 1999. Johns Hopkins Univ Pr.

Genetics & Your Health : A Guide for the 21st Century Family by Raye Lynn Alford 1999. Medford Pr.

Genomics: The Science and Technology Behind the Human Genome Project by Charles R. Cantor, Cassandra L. Smith, Human Genome Project 1 edition (February 2, 1999) John Wiley & Sons.

The Human Cloning Debate 2nd Edition by Glenn McGee (Editor) 2nd edition 2000. Berkeley Hills Books.

The Human Genome Project: Cracking the Code Within Us by Elizabeth L. Marshall 1997. Franklin Watts, Incorporated.

Human Molecular Genetics by Tom Strachan, Andrew P. Read 2nd edition 1999. John Wiley & Sons.

It Ain't Necessarily So: The Dream of the Human Genome and Other Illusions by Richard C. Lewontin 2000. New York Review of Books.

Life Lines: The Story of the New Genetics by J. S. Kidd, Renee A. Kidd 1999. Facts on File, Inc.

Molecular Genetics of Human Inherited Disease by Duncan J. Shaw (Editor) 1995. John Wiley & Son Ltd.

New Biology and Genetic Diseases by Bakhtaver S. Mahajan, Medha S. Rajadhyaksha, Bakhtaver S. Mahjan 1999.Oxford Univ Press.

Remaking Eden: How Genetic Engineering and Cloning Will Transform the American Family by Lee M. Silver 1998. Avon Press.

Unnatural Selection: The Promise and the Power of Human Gene Research by Lois Wingerson 1999. Bantam Doubleday Dell Pub (Trd Pap).

The Encyclopedia of Genetic Disorders and Birth Defects (Facts on File Library of Health and Living) by James Wynbrandt 2nd edition (November 1999. Facts on File, Inc.

Genes in Medicine: Molecular Biology and Human Genetic Disorders by Istvan Rasko, C. S. Downes (Editor) 1994. Chapman & Hall.

2. Course Analysis Questionnaire

Section A: Details of the Course

A1. This course is designed to be a 3-credit non-laboratory science course that students may elect in order to fulfill part of their liberal studies requirements for the 4-3-3 science option. It is intended for non-biology majors and non-biology minors only.

A2. This course does not require a change in any existing course or program.

A3. The course entitled Genetics in Modern Society has not been offered at Indiana University of Pennsylvania.

A4. This is not a dual-listed course.

A5.This course will not be offered for variable credit.

A6. Several institutions offer courses on human genetics, including those on the following list:

1. James Madison University- Frontiers in Science - Living with Molecular Biology
2. North Carolina State University- Genetics in Human Affairs
3. University of California at San Diego- Human Genetics
4. University of Texas Health Science Center at San Antonio- Introduction to Medical Genetics-
5. Penn State University- Human Genetics
6. Penn State University- Molecular Medicine
7. University of Washington- Human Genetics

However, no courses such as this course are offered withiin the SSHE system.

A7. No accrediting agency recommends or requires the skills or content of the proposed course.

Section B: Interdisciplinary Implications

B1. A single instructor will offer the course.

B2. There is currently a Genetics course for Biology majors (BIOL 263). The proposed course will not overlap with this existing course, as it is designated for Biology majors and is much more comprehensive in its content. The proposed course is for non-biology students with little or no background in Genetics.

B3. There will be seats in this course for students in the School of Continuing Education.

Section C: Implementation

C1. Three complement hours per offering will be required. Faculty resources are currently adequate.

C2. a. Space: One-average-size classroom per offering, to be used three times a week. Current resources are adequate.
b. Equipment: Standard audio-visual equipment such as an overhead projector and screen, and a TV and VCR. Current resources are adequate.
c. Laboratory Supplies: None required.

d. Library Materials: Current holdings are adequate for an introductory course for non-majors. However, students will be required to use inter-library loan, the Internet and material from faculty.
e. Travel Funds: No travel funds are necessary.

C3. Not applicable. This course is not being funded through a grant.

C4. It is expected that this course will be offered annually as student demand dictates.

C5. It is anticipated that a single section of the course will be offered during any one semester.

C6. Student enrollment will be limited by the size of the room where the class is held.

C7. No professional society recommends enrollment limits for a course of this nature.

C8. The course is designed for non-biology majors and as such will not affect the curriculum requirements for the majors in the Department of Biology.

D. Miscellaneous

No additional information is necessary.

Part III. Letters of Support

None are required.

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LIBERAL STUDIES COURSE APPROVAL, PARTS 1-3: GENERAL INFORMATION CHECK-LIST

I. Please indicate the LS category(ies) for which you are applying:

LEARNING SKILLS:
_____ First Composition Course
_____ Second Composition Course
_____ Mathematics

KNOWLEDGE AREAS:

_____ Humanities: History	_____ Fine Arts
_____ Humanities: Philos/Rel Studies	_____ Social Sciences
_____ Humanities: Literature	_____ Non-Western Cultures
_____ Natural Sci: Laboratory	_____ Health & Wellness
_X_ Natural Sci: Non-laboratory	_____ Liberal Studies Elective

II. Please use check marks to indicate which LS goals are primary, secondary, incidental, or not applicable. When you meet with the LSC to discuss the course, you may be asked to explain how these will be achieved.

Prim	Sec	Incid	N/A	
				A. Intellectual Skills and Modes of Thinking:
X				1. Inquiry, abstract logical thinking, critical analysis, synthesis, decision making, and other aspects of the critical process.
X				2. Literacy--writing, reading, speaking, listening.
		X		3. Understanding numerical data.
X				4. Historical consciousness.
X				5. Scientific Inquiry.
X				6. Values (Ethical mode of thinking or application of ethical perception).
		X		7. Aesthetic mode of thinking.
X				**B. Acquiring a Body of Knowledge or Understanding Essential to an Educated Person**
X				**C. Understanding the Physical Nature of Human Beings**
				D. Collateral Skills:
		X		1. Use of the library.
		X		2. Use of computing technology.

III. The LS criteria indicate six ways that courses should contribute to students' abilities. Please check all that apply. When you meet with the LSC, you may be asked to explain your check marks.

_X_ 1. Confront the major ethical issues which pertain to the subject matter; realize that although "suspended judgment" is a necessity of intellectual inquiry, one cannot live forever in suspension; and make ethical choices and take responsibility for them.
_X_ 2. Define and analyze problems, frame questions, evaluate available solutions and make choices.
_X_ 3. Communicate knowledge and exchange ideas by various forms of expression, in most cases writing and speaking.
_X_ 4. Recognize creativity and engage in creative thinking.
_X_ 5. Continue learning even after the completion of their formal education.
_X_ 6. Recognize relationships between what is being studied and current issues, thoughts, institutions, and/or events.

ANSWERS TO LIBERAL STUDIES QUESTIONS

(A) Not applicable. A single instructor will teach this course.

(B) When appropriate, this course includes contributions from ethnic/racial minorities and women in several ways. First, the required text is written by a woman (Dr. Ricki Lewis) who is a well-regarded scientist and spokesperson for science to the general public. Dr. Lewis has written a number of textbooks for the non-biology student (for example, *Life* (2000) is currently used by many General Biology courses for non-biology students), as well as being a regular contributor to the journal *New Scientist*. In the textbook selected for this course, Dr. Lewis does an admirable job of including the contributions of a number of female and minority scientists. For example, in Chapter 21 there is a well-written description of the work of Nancy Wexler on the cloning of a gene involved in Huntington's Disease. Furthermore, there are many descriptions of genetic disorders that occur primarily in racial/ethnic minority populations, such as sickle cell anemia found in the African American population and Tay-Sachs disease found in the Jewish populations. Second, both of the required non-textbook readings are by women, Dr. Evelyn Fox-Keller and Dr. Nancy Wexler. Dr. Fox-Keller is an extremely well regarded author noted for her ability to write for the non-scientist. Furthermore, she makes an attempt to bring to light the work of many different scientists in the field, not only the well known. Dr. Wexler was involved in the cloning of the Huntington's disease gene and gives a very good account of the emotional trauma suffered in families affected by genetic diseases. Third, the course will incorporate a number of subjects that concern both ethic/racial minorities and women. For example, the genetics of breast cancer and ovarian cancer will be discussed both in terms of their genetic basis and means of detection based on new genetic techniques. Also, in the section on the Genetics of Behavior, the controversy surrounding attempts to connect race, IQ and genetics will be discussed. This will be utilized as a means to discuss the concept that both environment and genetics play a role in the phenotype of an individual.

(C) This course will include two non-textbook readings that are intended to give the student a better background into the subject of Human Genetics. These books are both written for the non-scientist on the important subjects of genetic engineering and cloning. In each case, they present a balanced view of the subject so the layperson will be able to make well-informed decisions in the future.

(D) The proposed course differs from Principles of Biology I (BIOL 111), Genetics (BIOL 263) and Human Genetics (BIOL 265) in several ways. First, this course will not use formal or highly technical language to describe any aspect of genetics. It is expected that the students will have a limited science background. Second, there will be little emphasis on the detail that is stressed in courses for Biology majors. In addition, the student will not be asked to memorize large portions of information. It is the intent of the course to provide only the information required to make informed choices in the future on matters that concerns genetics and genetic technology. Finally, there is no laboratory portion of this course, which is standard in courses for Biology majors.

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Liberal Studies Course Approval Form
Instruction Sheet

Use this form only if you wish to have a course included in a Liberal Studies Learning Skill or Knowledge Area category. Do not use this form for synthesis or writing-intensive sections; different forms are available for these. If you have questions, contact the Liberal Studies Office, 352 Sutton Hall, telephone 357-5715.

This form is intended to assist you in developing your course to meet IUP's Criteria for Liberal Studies and to arrange your proposal in a standard order for consideration by the Liberal Studies Committee (LSC) and the University-wide Undergraduate
Curriculum Committee. When you have finished, your proposal will have these parts:

__X__ Standard UWUCC Course Proposal Cover Sheet, with signatures (one page)

__X__ Completed copy of LS General Information Check-List--Parts 1-3 of this form (one page)

__X__ One sheet of paper for your answers to the four questions in Part IV of this form (one page)

__X__ Completed check-list for each curriculum category in which your course is to be listed--e.g. Non-Western Cultures, Fine Arts, etc. (one page each) [Check-lists are found in the appendix to this Handbook.]

__X__ Course syllabus in UWUCC format.

Note: If this is a new course not previously approved by the University Senate, you will also need answers to the UWUCC Course Analysis Questionnaire. These are not considered by the LSC but will be forwarded to the UWUCC along with the rest of the proposal after the LSC completes its review. For information on UWUCC procedures for new courses or course revisions, see appropriate sections of this Handbook.

Submit one (1) copy of the completed proposal to the Liberal Studies Office (352 Sutton Hall.) The Liberal Studies Committee will make its own copies from your original; the committee does reserve the right to return excessively long proposals for editing before they are duplicated. (If you happen to have extra copies of the proposal, you are invited to send multiple copies to the LSC to save unnecessary copying.)

Please Number All Pages

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CHECK LIST -- LIBERAL STUDIES ELECTIVES

Knowledge Area Criteria which the course must meet:

__X__ Treat concepts, themes and events in sufficient depth to enable students to appreciate the complexity, history and current implications of what is being studied; and not be merely cursory coverage of lists of topics.

__X__ Suggest the major intellectual questions/problems which interest practitioners of a discipline and explore critically the important theories and principles presented by the discipline.

__X__ Allow students to understand and apply the methods of inquiry and vocabulary commonly used in the discipline.

__X__ Encourage students to use and enhance, wherever possible, the composition and mathematics skills built in the Skill Areas of Liberal Studies.

Liberal Studies Elective Criteria which the course must meet:

__X__ Meet the "General Criteria Which Apply to All Liberal Studies Courses."

__X__ Not be a technical, professional or pre-professional course.

Explanation: Appropriate courses are to be characterized by learning in its broad, liberal sense rather than in the sense of technique or preprofessional proficiency. For instance, assuming it met all the other criteria for Liberal Studies, a course in "Theater History" might be appropriate, while one in "The Craft of Set Construction" probably would not; or, a course in "Modern American Poetry" might be appropriate, while one in "New Techniques for Teaching Writing in Secondary Schools" probably would not; or, a course on "Mass Media and American Society" might be appropriate, while one in "Television Production Skills" probably would not; or, a course in "Human Anatomy" might be appropriate, while one in "Strategies for Biological Field Work" probably would not; or, a course in "Intermediate French" might be appropriate, while one in "Practical Methods for Professional Translators" probably would not.

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CHECK LIST -- NATURAL SCIENCES (Non-laboratory)

Knowledge Area Criteria which the course must meet:

__X__ Treat concepts, themes and events in sufficient depth to enable students to appreciate the complexity, history and current implications of what is being studied; and not be merely cursory coverage of lists of topics.

__X__ Suggest the major intellectual questions/problems which interest practitioners of a discipline and explore critically the important theories and principles presented by the discipline.

__X__ Allow students to understand and apply the methods of inquiry and vocabulary commonly used in the discipline.

__X__ Encourage students to use and enhance, wherever possible, the composition and mathematics skills built in the Skill Area of Liberal Studies.

Natural Science Criteria which the course must meet:

__X__ Examine a body of knowledge of natural science that will contribute to an understanding of the natural world.

__X__ Provide an understanding of the development of natural science theories and their modification.

__X__ Teach students to formulate and test hypotheses.

__X__ Provide an understanding of some of the "great moments" in the history of natural science and the individuals, including women and minorities, responsible for them.

Additional Natural Science Criteria which the course should meet:

__X__ Encourage an appreciation of the complex interrelationship of natural science with the life of the individual.

__X__ Develop in students the abilities necessary to cope with the consequences of natural science in the modern world.

__X__ Develop an inquiring attitude consistent with the tenets of natural science, an attitude that is willing to expose fallacy on the basis of reason, that demands evidence for scientific assertions and yet is tolerant of hypotheses in the absence of contradictory evidence.

Liberal Studies Office
110 Gordon Hall ext. 7-5715

Mary Sadler
email: msadler

Date: March 11, 2002

To: Dr. Robert Hinrichsen
Biology Department

From: Mary Sadler, Director Liberal Studies

Subject: BIOL 113 Modern Genetics in Society

At the February 28, 2002 meeting, the Liberal Studies Committee **approved BIOL 113 Modern Genetics in Society for the non-laboratory science category** in the Liberal Studies Program.
Thank you for responding to our recommendations so promptly; we appreciate your effort.

Our approval will be forwarded to the UWUCC where the proposal is in the process of review as a new course.

CC: Dr. Barkley Butler, Chair
Dr. John Eck, Dean
UWUCC