

I. CATALOG INFORMATION

- A. Discipline: BIOLOGY
- B. Subject Code and Number: BIOL M17
- C. Course Title: Heredity, Evolution, and Society

- D. Credit Course units:
 Units: 3
 Lecture Hours per week: 3
 Lab Hours per week : 0
 Variable Units : No

- E. Student Learning Hours:
 Lecture Hours:
 Classroom hours: 52.5 - 52.5
 Laboratory/Activity Hours:
 Laboratory/Activity Hours 0 - 0

Total Combined Hours in a 17.5 week term: 52.5 - 52.5

- F. Non-Credit Course hours per week _____

- G. May be taken a total of: 1 2 3 4 time(s) for credit

- H. Is the course co-designated (same as) another course: No Yes
 If YES, designate course Subject Code & Number: _____

- I. Course Description:

Introduces principles of modern genetics and evolutionary theory with specific reference to the human species. Examines scientific method, biological laws governing heredity in individuals and populations, biological factors that influence health and disease, and the interplay between the human population and the environment. Analyzes the world's economic, demographic, and political problems from a biological perspective and discusses implications and possible solutions.

- J. Entrance Skills

*Prerequisite: _____ No Yes Course(s)

*Corequisite: _____ No Yes Course(s)

Limitation on Enrollment: _____ No Yes

Recommended Preparation: _____ No Yes Course(s)

Other:

No Yes

K. Other Catalog Information:

II. COURSE OBJECTIVES

Upon successful completion of the course, a student will be able to:

		Methods of evaluation will be consistent with, but not limited by, the following types or examples.
1	use the principles of the scientific method to evaluate the scientific merit in stories presented in the popular media.	Written lecture exams, quizzes, short essay paper, and class presentation
2	explain the relationship between good nutrition and good health.	Written lecture exams, quizzes, short essay paper, and class presentation
3	discuss the relationship between nutritional needs and energy needs.	Written lecture exams, quizzes, short essay paper, and class presentation
4	describe humans' place in the scheme of living things.	Written lecture exams, quizzes, short essay paper, and class presentation
5	illustrate an understanding of the inheritance of human traits through the use of examples.	Written lecture exams, quizzes, short essay paper, and class presentation
6	discuss the relationship between cell division and cancer.	Written lecture exams, quizzes, short essay paper, and class presentation
7	explain the relationship between genes and chromosomes.	Written lecture exams, quizzes, short essay paper, and class presentation
8	describe genetic engineering and debate its merit in specific contexts.	Written lecture exams, quizzes, short essay paper, and class presentation

9	discuss the evidence for evolution and apply it to human origins.	Written lecture exams, quizzes, short essay paper, and class presentation
10	express an understanding of the origin and biological significance of differences and similarities in human populations.	Written lecture exams, quizzes, short essay paper, and class presentation
11	describe the biological basis of disease and our body's response.	Written lecture exams, quizzes, short essay paper, and class presentation
12	explain humans' impact on the environment in terms of biodiversity, pollution, and climate.	Written lecture exams, quizzes, short essay paper, and class presentation
13	assess the effect of the human population on the earth in terms of limited resources.	Written lecture exams, quizzes, short essay paper, and class presentation
14	evaluate potential solutions to the problems associated with human population growth.	Written lecture exams, quizzes, short essay paper, and class presentation

III. COURSE CONTENT

Estimated %	Topic	Learning Outcomes
Lecture (must total 100%)		
6.00%	Scientific Method	1
12.00%	Nutrition Biological molecules Digestion Aerobic respiration Eating disorders	1, 2, 3, 4
6.00%	Diversity of Life	1, 4, 5, 6, 7, 8, 9, 10
12.00%	Genetics Mendelian genetics Influence of environment Nature of DNA DNA and chromosomes	1, 5, 6, 7, 8, 9, 10, 11
10.00%	Cell cycle Mitosis Mutations and cancer Meiosis	1, 5, 6, 7, 8, 9, 10
	Evolution	

12.00%	Darwin and natural selection Human origins Populations and speciation Biological value of diversity	1, 4, 8, 9, 10, 11
6.00%	Disease processes Infectious agents Defense mechanisms Health – interplay of environment and anatomy	1, 2, 3, 6, 7, 12
12.00%	Environmental Biology Biodiversity and extinction Climatic changes	1, 12, 13, 14
12.00%	Human Demographics Carrying capacity Environmental issues related to human population growth	1, 12, 13, 14
12.00%	Biotechnology Genetic engineering Human Genome Project Implications	1, 7, 8, 9

IV. TYPICAL ASSIGNMENTS

A. Writing assignments

Writing assignments are required. Possible assignments may include, but are not limited to:

1	write essays on assigned topics related to human evolution.
2	complete a research paper that discusses science and its relation to human activity.
3	evaluate the merits and pitfalls of gene editing in humans.

B. Appropriate outside assignments

Appropriate outside assignments are required. Possible assignments may include, but are not limited to:

1	complete genetic problem sets.
2	read scientific literature covering heredity and evolution.
3	research and then present a oral presentation on the ethical issues associated with genetic engineering and its potential impact on society.

C. Critical thinking assignments

Critical thinking assignments are required. Possible assignments may include, but are not limited to:

1	participate in the planning for group projects.
2	research potential solutions to the problems associated with human population growth.
3	discuss the cellular and functional changes occurring in melanocyte that make melanoma the most lethal form of skin cancer.

V. METHODS OF INSTRUCTION

Methods of instruction may include, but are not limited to:

Distance Education – When any portion of class contact hours is replaced by distance education delivery mode (Complete DE Addendum, Section XV)

Lecture/Discussion

Laboratory/Activity

Other (Specify) Computer-assisted instruction
 Guest speakers
Audio-visual (all videos and DVD's must be closed caption)

Optional Field Trips

Required Field Trips

VI. METHODS OF EVALUATION

Methods of evaluation may include, but are not limited to:

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Essay Exam | <input checked="" type="checkbox"/> Classroom Discussion | <input type="checkbox"/> Skill Demonstration |
| <input checked="" type="checkbox"/> Problem Solving Exam | <input checked="" type="checkbox"/> Reports/Papers/Journals | <input checked="" type="checkbox"/> Participation |
| <input checked="" type="checkbox"/> Objective Exams | <input checked="" type="checkbox"/> Projects | <input checked="" type="checkbox"/> Other (specify) |

Assessment of group projects and presentations

Genetic problems and pedigrees

Analyses of assigned scientific literature

VII. REPRESENTATIVE TEXTS AND OTHER COURSE MATERIALS

Belk, Colleen, and Virginia Borden Maier. Biology: Science for Life with Physiology. 6th ed. Pearson, 2019.

Starr, Cecie, et al. Biology Today and Tomorrow with Physiology. 5th ed. Cengage Learning, 2016.

Simon, Eric J., et al. Campbell Essential Biology with Physiology. 6th ed. Pearson, 2019.

VIII. STUDENT MATERIALS FEES

No Yes

IX. PARALLEL COURSES

College	Course Number	Course Title	Units
College of Alameda	BIOL 48F	Genetics, Heredity, Evolution and Society	3
CSU Long Beach	BIOL 211	Introduction to Evolution and Diversity	4
Chabot College	BIOL 25	Human Heredity and Evolution	3

X. MINIMUM QUALIFICATIONS

Courses Requiring a Masters Degree:
 Master's degree in any biological science OR bachelor's degree in any biological science AND master's degree in biochemistry, biophysics, or marine science OR the equivalent.

XI. ARTICULATION INFORMATION**A. Title V Course Classification:**

1. This course is designed to be taken either:

- Pass/No Pass only (no letter grade possible); or
 Letter grade (P/NP possible at student option)

2. Degree status:

Either Associate Degree Applicable; or Non-associate Degree Applicable

B. Moorpark College General Education:

1. Do you recommend this course for inclusion on the Associate Degree General Education list?

Yes: No: If YES, what section(s)?

- A1 - Natural Sciences - Biological Science
 A2 - Natural Sciences - Physical Science
 B1 - Social and Behavioral Sciences - American History/Institutions
 B2 - Social and Behavioral Sciences - Other Social Behavioral Science
 C1 - Humanities - Fine or Performing Arts
 C2 - Humanities - Other Humanities
 D1 - Language and Rationality - English Composition
 D2 - Language and Rationality - Communication and Analytical Thinking
 E1 - Health/Physical Education
 E2 - PE or Dance
 F - Ethnic/Gender Studies

C. California State University(CSU) Articulation:1. Do you recommend this course for transfer credit to CSU? Yes: No:

2. If YES do you recommend this course for inclusion on the CSU General Education list?

Yes: No: If YES, which area(s)?

- A1 A2 A3 B1 B2 B3 B4
C1 C2 D1 D2 D3 D4 D5

D6 D7 D8 D9 D10 E

D. University of California (UC) Articulation:1. Do you recommend this course for transfer to the UC? Yes: No: 2. If YES do you recommend this course for the Intersegmental General Education Transfer Curriculum (IGETC)? Yes: No:

IGETC Area 1: English Communication

- English Composition
- Critical Thinking-English Composition
- Oral Communication

IGETC Area 2: Mathematical Concepts and Quantitative Reasoning

- Mathematical Concepts

IGETC Area 3: Arts and Humanities

- Arts
- Humanities

IGETC Area 4: Social and Behavioral Sciences

- Anthropology and Archaeology
- Economics
- Ethnic Studies
- Gender Studies
- Geography
- History
- Interdisciplinary, Social & Behavioral Sciences
- Political Science, Government & Legal Institutions
- Psychology
- Sociology & Criminology

IGETC Area 5: Physical and Biological Sciences (mark all that apply)

- Physical Science Lab or Physical Science Lab only (non-sequence)
- Physical Science Lecture only (non-sequence)
- Biological Science
- Physical Science Courses
- Physical Science Lab or Biological Science Lab Only (non-sequence)
- Biological Science Courses
- Biological Science Lab course
- First Science course in a Special sequence
- Second Science course in a Special Sequence
- Laboratory Activity
- Physical Sciences

IGETC Area 6: Language other than English

- Languages other than English (UC Requirement Only)
- U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)
-

U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)

XII. REVIEW OF LIBRARY RESOURCES

- A. What planned assignment(s) will require library resources and use?

The following assignments require library resources:

Reading of lay science literature using the Library's print and online resources in preparation for a paper on a topic such as the merits and pitfalls of gene editing in humans.

- B. Are the currently held library resources sufficient to support the course assignment?

YES: NO:

If NO, please list additional library resources needed to support this course.

XIII. PREREQUISITE AND/OR COREQUISITE JUSTIFICATION

BIOL M17: Not Applicable

XIV. WORKPLACE PREPARATION

BIOL M17: Not Applicable

XV. DISTANCE LEARNING COURSE OUTLINE ADDENDUM

BIOL M17: Not Applicable

XVI. GENERAL EDUCATION COURSE OUTLINE ADDENDUM

General Education Division of Learning [check all applicable boxes]:

- Natural Sciences
 - Biological Science
 - Physical Science
- Social and Behavioral Sciences
 - American History/Institutions
 - Other Social Science
- Humanities
 - Fine or Performing Arts
 - Other Humanities
- Language and Rationality
 - English Composition
 - Communication and Analytical Thinking
- Health/Physical Education
- Ethnic/Women's Studies

Check either Option 1 or Option 2

- OPTION #1:** Moorpark College has already received approval from the CSU and/or UC systems for this course to fulfill a GE requirement. Note: This option applies only to technical revisions and updated courses.
- OPTION #2:** Moorpark College has not received approval from the CSU and/or UC systems for this course to fulfill a GE requirement. This option applies to all new and substantively revised courses.

XVII. STUDENT MATERIALS FEE ADDENDUM

BIOL M17: Not Applicable

XVIII. REPEATABILITY JUSTIFICATION TITLE 5, SECTION 55041

BIOL M17: Not Applicable

XIX. CURRICULUM APPROVAL

Course Information:

Discipline: BIOLOGY

Discipline Code and Number: BIOL M17

Course Revision Category: Outline Update

Course Proposed By:

Originating Faculty Audrey Chen 09/12/2018

Faculty Peer: Paul Kores 09/13/2018

Curriculum Rep: Beth Miller 09/14/2018

Department Chair: Audrey Chen 09/12/2018

Division Dean: Carol Higashida 09/13/2018

Approved By:

Curriculum Chair: Jerry Mansfield 02/08/2019

Executive Vice President: _____

Articulation Officer: Letrisha Mai 02/06/2019

Librarian: Mary LaBarge 02/05/2019

Implementation Term and Year: Fall 2019

Approval Dates:

Approved by Moorpark College Curriculum Committee: 02/19/2019

Approved by Board of Trustees (if applicable): _____

Approved by State (if applicable): 02/27/2019