BIOL R101H: HONORS: GENERAL BIOLOGY

Originator
mnicholson

College
Oxnard College

Discipline (CB01A)
BIOL - Biology

Course Number (CB01B)
R101H

Course Title (CB02)
Honors: General Biology

Banner/Short Title
Honors: General Biology

Credit Type
Credit

Start Term
Fall 2021

Catalog Course Description
This course is an introduction to the science of life, cell biology, metabolism, diet, genetics, evolution and ecology and will include current issues and news on these topics. Honors work challenges students to be more analytical and creative through expanded assignments, real-world applications, and enrichment opportunities. Credit will not be awarded for both the honors and regular versions of a course. Credit will be awarded only for the first course completed with a grade of C or better or "P."

Taxonomy of Programs (TOP) Code (CB03)
0401.00 - Biology, General

Course Credit Status (CB04)
D (Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)
A (Transferable to both UC and CSU)

Course Basic Skills Status (CB08)
N - The Course is Not a Basic Skills Course

SAM Priority Code (CB09)
E - Non-Occupational

Course Cooperative Work Experience Education Status (CB10)
N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)
Y - Credit Course

Educational Assistance Class Instruction (Approved Special Class) (CB13)
N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)
Y - Not Applicable

Course Noncredit Category (CB22)
Y - Credit Course

Funding Agency Category (CB23)
Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)
1 - Program Applicable

General Education Status (CB25)
Y - Not Applicable

Support Course Status (CB26)
N - Course is not a support course

Field trips
May be required

Faculty notes on field trips; include possible destinations or other pertinent information
Possible field trip destinations include local parks, beaches, natural areas, botanical gardens, harbors, islands, natural history museums, and aquaria.

Grading method
Letter Graded

Does this course require an instructional materials fee?
No

Repeatable for Credit
No

Is this course part of a family?
No

Units and Hours

Carnegie Unit Override
No

In-Class

Lecture
Minimum Contact/In-Class Lecture Hours
52.5
Maximum Contact/In-Class Lecture Hours
52.5

Activity

Laboratory

Total in-Class

Total in-Class
Total Minimum Contact/In-Class Hours
52.5
Total Maximum Contact/In-Class Hours
52.5

Outside-of-Class

Internship/Cooperative Work Experience

Paid

Unpaid

Total Outside-of-Class

Total Outside-of-Class
Minimum Outside-of-Class Hours
105
Maximum Outside-of-Class Hours
105

Total Student Learning

Total Student Learning
Total Minimum Student Learning Hours
157.5
Total Maximum Student Learning Hours
157.5

Minimum Units (CB07)
3
Maximum Units (CB06)
3

Advisories on Recommended Preparation
ENGL R095 and ENGL R097 or ENGL R100 or ENGL R101 or ENGL R101H; concurrent enrollment in BIOL R101L

Entrance Skills

Entrance Skills
Understand the scientific method and know how experimentation is conducted to test hypotheses.

Prerequisite Course Objectives
BIOL R101L-Identify the different components of the scientific method of inquiry
BIOL R101L-Recognize appropriate units of measurement in the metric system.
BIOL R101L-Use basic laboratory equipment including a light microscope, a spectrophotometer, and different tools for measuring volume such as a beaker or graduated cylinder

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Entrance Skills
Demonstrate in writing an ability to evaluate and understand scientific literature that conveys complex concepts and ideas with challenging vocabulary.

Prerequisite Course Objectives
ENGL R095-Demonstrate increased reading comprehension of content specific materials from a variety of disciplines.
ENGL R095-Demonstrate an expanded vocabulary and understanding of general academic, technical, and domain-specific words and phrases sufficient for reading and writing at the college and career readiness levels.
ENGL R095-Use critical reading skills to evaluate and judge reading materials.
ENGL R095-Read with comprehension a variety of genres: college textbooks, journal articles, short stories, poetry, essays, newspapers, and commentaries.
ENGL R095-Employ library research skills to locate information and sources.
ENGL R095-Determine the literal and implied main idea, theme or conclusions of an expository or academic fiction or non-fiction text and how it is supported by key details.

Entrance Skills

Demonstrate in writing an ability to evaluate and understand scientific literature that conveys complex concepts and ideas with challenging vocabulary.

Prerequisite Course Objectives

ENGL R097-Write short essays of at least five paragraphs with effective introductory paragraphs; well-organized, coherent, and detailed support of thesis; and effective conclusions
ENGL R097-Write essays with acceptable college-level grammar, syntax, spelling, and idiomatic usage
ENGL R097-Analyze essay exam questions and organize and write effective responses
ENGL R097-Demonstrate familiarity with the principles of research and documentation
ENGL R097-Write a short paper incorporating documentation

Entrance Skills

Demonstrate in writing an ability to evaluate and understand scientific literature that conveys complex concepts and ideas with challenging vocabulary.

Prerequisite Course Objectives

ENGL R100-Develop a thesis.
ENGL R100-Employ logical organizational strategies in writing essays.
ENGL R100-Write short (500-word) essays with effective introductory paragraphs; well-organized, coherent, and detailed support of thesis; and effective conclusions.
ENGL R100-Revise content and rewrite for fluent expression.
ENGL R100-Write essays with acceptable college-level grammar, syntax, spelling, and idiomatic usage.
ENGL R100-Analyze essay exam questions and organize and write effective responses.
ENGL R100-Successfully use principles of research and documentation systems.
ENGL R100-Read college-level materials and recognize the main idea.
ENGL R100-Summarize and paraphrase.
ENGL R100-Distinguish fact from opinion.

Entrance Skills

Demonstrate in writing an ability to evaluate and understand scientific literature that conveys complex concepts and ideas with challenging vocabulary.

Prerequisite Course Objectives

ENGL R101-Write multiple-page expository and persuasive essays
ENGL R101-Demonstrate college-level control of mechanical elements of writing such as grammar, syntax, spelling, vocabulary, and idiomatic usage
ENGL R101-Research a topic, analyze and synthesize information, and report findings in a properly documented essay
ENGL R101-Demonstrate critical thinking skills and rhetorical awareness in analyzing others' non-fiction writing and in developing essays
ENGL R101-Write timed essays in class exhibiting acceptable college-level control of mechanics, organization, development, and coherence

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Entrance Skills

Demonstrate in writing an ability to evaluate and understand scientific literature that conveys complex concepts and ideas with challenging vocabulary.

Prerequisite Course Objectives

ENGL R101H-Write multiple-page expository and persuasive essays
ENGL R101H- Demonstrate college-level control of mechanical elements of writing such as grammar, syntax, spelling, vocabulary, and idiomatic usage
ENGL R101H- Research a topic, analyze and synthesize information, and report findings in a properly documented essay
ENGL R101H-Demonstrate critical thinking skills and rhetorical awareness in analyzing others' non-fiction writing and in developing essays
ENGL R101H-Write timed essays in class exhibiting acceptable college-level control of mechanics, organization, development, and coherence

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Requisite Justification

Requisite Type

Concurrent

Requisite
BIOL R101L

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Closely related lecture/laboratory course

Requisite Type
Advisory

Requisite
ENGL R095

Requisite Description
Course not in a sequence

Level of Scrutiny/Justification
Required communication/computation skill

Requisite Type
Advisory

Requisite
ENGL R096

Requisite Description
Course not in a sequence

Level of Scrutiny/Justification
Required communication/computation skill

Requisite Type
Advisory

Requisite
ENGL R100

Requisite Description
Course not in a sequence

Level of Scrutiny/Justification
Required communication/computation skill

Requisite Type
Advisory

Requisite
ENGL R101

Requisite Description
Course not in a sequence

Level of Scrutiny/Justification
Required communication/computation skill

Requisite Type
Advisory

Requisite
ENGL R101H

Requisite Description
Course not in a sequence

Level of Scrutiny/Justification
Required communication/computation skill

Student Learning Outcomes (CSLOs)

	Upon satisfactory completion of the course, students will be able to:
1	Students will be able to identify characteristics common to all living organisms.
2	Students will be able to describe the function of indicated cellular organelles.
3	Students will be able to solve inheritance questions using Punnett squares.
4	HONORS: Student will be able to synthesize information and formulate a logical thesis for an honors project focusing on a biological subject

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1	Describe the scientific method of inquiry as it relates to biological organisms.
2	Describe the structure and function of cells and common organelles and their relationship to tissues, organs, and organ systems.
3	Explain the chemical and molecular basis for human nutritional needs.
4	Explain energy flow through the biological world with reference to photosynthesis, cellular respiration, and ecological cycles.
5	Interpret inheritance patterns and describe the mechanisms involved in meiosis and mitosis.
6	Summarize the role of nucleic acids in protein synthesis.
7	Define and explain mechanisms of biological change and evolution.
8	Describe relationships among and between the biotic and abiotic components of populations, communities, ecosystems, and biomes.
9	Apply critical thinking skills in recognizing the impacts of biology in society.
10	Describe current issues and applications of biotechnology.
11	HONORS: Critically interpret, summarize, and analyze original scientific research.
12	HONORS: Report on seminars, conferences, or presentations within the scientific community.
13	HONORS: Identify, discuss, and present on scientifically significant subjects and issues.

Course Content

Lecture/Course Content

1. Introduction to the Science of Life
   a. Characteristics of life
   b. Organization of life
2. Scientific Inquiry
   a. Descriptive vs. experimental science
   b. Hypothesis testing
   c. Experimental design
3. Biological Molecules
   a. Chemistry of water
   b. Organic compounds in cells
4. Cell Structure and Function

   a. Membranes
   b. Organelles
5. Energy Cycling
   a. Metabolism
   b. Photosynthesis
   c. Respiration
6. Cell Division, Sex, Stem Cells and Cancer
   a. DNA synthesis
   b. Mitosis
   c. Meiosis
7. Genetics
   a. Genes, alleles, and traits
   b. Inheritance patterns
8. Biotechnology
   a. Mutation, viral recombination, and crossing over
   b. Genetic recombination, gene splicing, transgenic species, GM produce
   c. Cloning
9. Evolution
   a. Evidence
   b. Species and natural selection
10. Biodiversity
   a. Divergent evolution
   b. Extinction
   c. Classification
11. Ecology
   a. Population ecology
   b. Communities: species interactions
   c. Ecosystems: habitats, nutrient recycling, sinks, and sources
12. Future of the Biosphere
   a. Human impacts
   b. Conservation and sustainability

Laboratory or Activity Content

No laboratory or activity content.

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Problem solving exercises
Written expression

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Essay exams
Essays
Group projects
Individual projects
Objective exams
Problem-Solving Assignments
Reports/papers
Research papers
Simulations

Instructional Methodology

Specify the methods of instruction that may be employed in this course

Audio-visual presentations
Computer-aided presentations
Class activities
Class discussions
Distance Education
Demonstrations

Field trips
Group discussions
Instructor-guided interpretation and analysis
Instructor-guided use of technology
Internet research
Lecture
Small group activities

Describe specific examples of the methods the instructor will use:

1. Instructor-guided interpretation and analysis of topics presented in assigned text readings, such as cell biology, ecology, evolution, or biotechnology.
2. In-class group worksheets and activities to enhance understanding of presented topics, such as the cell cycle and cancer.
3. Animations, video clips, DVDs, slides and models to demonstrate biological processes and structures such as cellular organelles and cell reproduction.

Representative Course Assignments

Writing Assignments

1. Students will be required to complete homework questions on topics covered in class and the text.
2. Students will be required to summarize assigned articles from primary and secondary sources.
3. (Honors) Students will be required to review and/or summarize appropriate scientific literature related to subjects of honors project.
4. (Honors) Students will be required to evaluate published or presented scientific research.

Critical Thinking Assignments

1. Students will analyze and evaluate the central dogma of protein production, demonstrating understanding of the role that DNA plays in both coding for proteins and inheritance.

Reading Assignments

1. Students will be required to read assigned sections of the textbook.
2. Students will be assigned articles from primary and secondary sources relevant to topics covered in class.
3. (Honors) Students will be required to read appropriate scientific literature related to subjects of honors project.

Skills Demonstrations

No skills demonstrations.

Other assignments (if applicable)

1. Students may be asked to participate in on-line discussions based on topics relevant to material covered in class.
2. Students may be asked to give in-class presentations summarizing an article from a primary literature source.
3. (Honors) Student may be required to attend seminars, conferences, or scientific presentations.

Outside Assignments

Representative Outside Assignments

1. Students will be required to read assigned sections of the textbook (i.e., chapter readings).
2. Students will be assigned articles to read from primary and secondary sources (e.g., topical subjects such as CRISPR or development of vaccines).
3. Students will be required to complete homework questions and assignments on topics covered in class and the text (e.g., solving inheritance problems with Punnett squares or diagramming the cell cycle).
4. Students will be required to evaluate or summarize assigned articles from primary and secondary sources (e.g., evaluate the information from an original primary research paper on Olestra and compare it to a secondary source summary of the same).

Articulation

Comparable Courses within the VCCCD

BIOL M01 - Introduction to Biology
BIOL R101 - General Biology
BIOL V01 - Principles of Biology

District General Education

A. Natural Sciences

A1. Biological Science
Approved

B. Social and Behavioral Sciences

C. Humanities

D. Language and Rationality

E. Health and Physical Education/Kinesiology

F. Ethnic Studies/Gender Studies

CSU GE-Breadth

Area A: English Language Communication and Critical Thinking

Area B: Scientific Inquiry and Quantitative Reasoning

B2 Life Science
Approved

Area C: Arts and Humanities

Area D: Social Sciences

Area E: Lifelong Learning and Self-Development

CSU Graduation Requirement in U.S. History, Constitution and American Ideals:

IGETC

Area 1: English Communication

Area 2A: Mathematical Concepts & Quantitative Reasoning

Area 3: Arts and Humanities

Area 4: Social and Behavioral Sciences

Area 5: Physical and Biological Sciences

Area 5B: Biological Science
Approved

Area 6: Languages Other than English (LOTE)

Textbooks and Lab Manuals

Resource Type
Textbook

Description
Colleen Belk & Virginia Borden Maier. (2018). *Biology: Science for Life* (6th). Pearson. Hoboken, NJ. ISBN 978-0-134-67547-3

Resource Type
Textbook

Description

Martha Taylor, Eric Simon, Jean Dickey, & Kelly Hogan. (2020). *Campbell Biology: Concepts and Connections* (10th). Pearson. Hoboken, NJ. ISBN 978-0-135-26916-9

Resource Type

Other Resource Type

Description

Video presentations, video clips, and animations

Library Resources

Assignments requiring library resources

Assignments focusing on published primary sources and research articles.

Sufficient Library Resources exist

Yes

Example of Assignments Requiring Library Resources

Students will be required to evaluate or summarize assigned articles from primary and secondary sources (e.g., evaluate and compare the information from a primary source to a secondary source summary).

Distance Education Addendum

Definitions

Distance Education Modalities

Hybrid (51%–99% online)
Hybrid (1%–50% online)
100% online

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

Regular Effective/Substantive Contact

Hybrid (1%–50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Discussions focusing on a subject for which students will make an original post and then thoughtfully respond to other student postings; may also allow instructor and students to address miscellaneous questions and related subjects.
E-mail	Communication venue to allow instructor-student and student-student dialogue for problem-solving/question/answer purposes and to submit certain types of assignments.
Other DE (e.g., recorded lectures)	Recorded tutorials, lectures, and video meetings.

Synchronous Dialog (e.g., online chat)	Instant messaging and/or chat to allow instructor-student and student-student dialogue for teaching and/or studying.
Telephone	Communication venue to allow instructor-student and student-student dialogue for problem-solving/question/answer purposes
Video Conferencing	Video meetings to allow the instructor to highlight important information (perhaps lecture) and facilitate immediate student interaction (such as problem-solving/question/answer session).ADA compliance will be upheld with Closed Captioning during the session or of the recorded session. Recordings of all live sessions will be made available within the LMS.

Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Discussions focusing on a subject for which students will make an original post and then thoughtfully respond to other student postings; may also allow instructor and students to address miscellaneous questions and related subjects.
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Video Conferencing	Video meetings to allow the instructor to highlight important information (perhaps lecture) and facilitate immediate student interaction (such as problem-solving/question/answer session).ADA compliance will be upheld with Closed Captioning during the session or of the recorded session. Recordings of all live sessions will be made available within the LMS.

100% online Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Discussions focusing on a subject for which students will make an original post and then thoughtfully respond to other student postings; may also allow instructor and students to address miscellaneous questions and related subjects.
E-mail	Communication venue to allow instructor-student and student-student dialogue for problem-solving/question/answer purposes and to submit certain types of assignments.
Other DE (e.g., recorded lectures)	Recorded tutorials, lectures, and video meetings.
Synchronous Dialog (e.g., online chat)	Instant messaging and/or chat to allow instructor-student and student-student dialogue for teaching and/or studying.
Telephone	Communication venue to allow instructor-student and student-student dialogue for problem-solving/question/answer purposes
Video Conferencing	Video meetings to allow the instructor to highlight important information (perhaps lecture) and facilitate immediate student interaction (such as problem-solving/question/answer session).ADA compliance will be upheld with Closed Captioning during the session or of the recorded session. Recordings of all live sessions will be made available within the LMS.

Examinations

Hybrid (1%–50% online) Modality

Online
On campus

Hybrid (51%–99% online) Modality
Online
On campus

Primary Minimum Qualification
BIOLOGICAL SCIENCES

Review and Approval Dates

Department Chair
09/15/2020

Dean
09/16/2020

Technical Review
10/14/2020

Curriculum Committee
10/14/2020

Curriculum Committee
12/09/2020

CCCCO
MM/DD/YYYY

Control Number
CCC000579741

DOE/accreditation approval date
MM/DD/YYYY