

## **BIOL 172 General Biology II**

CRN 63081 \* 03 Credits

<b>I INSTRUCTOR:</b>	David A. Krupp, Ph.D.
<b>OFFICE:</b>	Hale 'Imiloa 121A
<b>OFFICE HOURS:</b>	TR 10:00 a.m. – 11:00 a.m., W 11:00 a.m. – Noon Other days/times by appointment
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<b>EFFECTIVE DATE:</b>	Spring 2015
<b>COURSE WEBSITE:</b>	<a href="http://krupp.wcc.hawaii.edu/BIOL172/biol172.htm">http://krupp.wcc.hawaii.edu/BIOL172/biol172.htm</a>
<b>LAULIMA URL:</b>	<a href="https://laulima.hawaii.edu/portal">https://laulima.hawaii.edu/portal</a>

### **WINDWARD COMMUNITY COLLEGE MISSION STATEMENT**

*Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai'i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O'ahu's Ko'olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.*

### **CATALOG DESCRIPTION**

Continuation of BIOL 171. Topics include: Origin of eukaryotic organisms, their general characteristics, life cycles, systematics and evolution; Anatomy, physiology and classification of higher plants; Anatomy, physiology, behavior and classification of animals; and Basic ecological principles. (3 hrs. lect.)

### **PREREQUISITE**

- Credit in BIOL 171

### **RECOMMENDED PREPARATION**

- Credit or concurrent registration in CHEM 162
- Concurrent registration in BIOL 172L

### **STUDENT LEARNING OUTCOMES**

*By the end of this class, the student should be able to*

- Contrast the general characteristics, life cycles, evolution and systematics of eukaryotic organisms.
- Describe the detailed biology of higher plants.
- Describe the detailed biology of animals.
- Explain how interacting environmental factors (physical, chemical and biological) determine the distribution and abundance of living things.

## COURSE LECTURE TOPICS

- The Diversity of Life: Protists
- The Diversity of Life: Fungi
- The Diversity of Life: Primitive Terrestrial Plants
- The Diversity of Life: Seed Plants
- Animal Body Plans
- The Diversity of Life: Invertebrate Animals
- The Diversity of Life: Craniates
- Plant Cell Types
- Plant Structure and Growth
- Plant Transport Processes
- Plant Nutrition
- Plant Reproduction: Development and Growth
- Plant Responses to Internal and External Signals
- Introduction to Animal Architecture and Function
- Thermoregulation
- Feeding, Digestion, and Nutrition in Animals
- Animal Circulation
- Gas Exchange in Animals
- Osmoregulation and Excretion
- The Nervous System: Transmission of Nerve Impulses
- The Nervous System: Anatomy and Function
- The Sense Organs
- Muscular Systems
- The Endocrine System
- Body Defenses and Immunity
- Animal Reproduction
- Animal Development
- Animal Behavior
- Ecological Principles: Abiotic Factors and Biomes
- Ecological Principles: Population Ecology
- Ecological Principles: Community Ecology
- Ecological Principles: Ecosystems
- Human Impacts on the Environment

## MODE OF INSTRUCTION

*The previously described objectives will be achieved through the aid of the following learning activities:*

- Lecture presentations and demonstrations (these may be televised or viewed as downloadable podcasts from the course Laulima site or through the University of Hawai'i's Video-On-Demand option).
- Internet-assisted activities and resources (e.g., Laulima and course website).
- Readings from textbook and instructor's lecture outlines and study guides (lecture outlines and study guides downloadable as pdf files from the course Laulima site).

## COURSE TASKS, ASSESSMENT AND GRADING

**QUIZZES.** The student will take a minimum of ten quizzes (15 points each; 150 points total) administered through the Internet (Laulima) during specified time periods (but not during class sessions). These quizzes will address the detailed content and major concepts presented in the lectures, lecture outlines, text readings, and study guide activities. If the student takes more than ten quizzes, only the best ten quiz scores will be used in calculating the student's total points. Since these quizzes may be taken using home computers connected to the Internet, students may refer to instructional resources (text, study guide, lecture notes, etc.) while taking the quizzes. However, the quizzes will be timed, the student having only 20 minutes to complete each quiz. Because the student will be able to drop several of the lowest quiz scores, ***no make-up quizzes for missed quizzes will be administered for any reason including computer/Internet crashes, illnesses, and emergencies (the student will receive no score for missed quizzes). The student should also note that quizzes are only reviewable from the course Laulima site if the student has taken them. The student should not expect to be able to review quizzes that the student has not accessed from the course Laulima site during the quiz availability period.***

**EXAMINATIONS.** The student will take two non-cumulative midterm examinations (100 points each) and a cumulative final examination (150 points) to demonstrate understanding of information presented primarily during lectures. The first midterm examination will cover information presented during the first third of the course. The second midterm examination will cover information presented during the second third of the course. Two thirds of the final examination will emphasize the final third of the course, while one third of the final will draw on information covered during the first and second thirds of the course. The ***closed-book, proctored*** examinations will be administered through the Internet using Laulima at your campus' Learning Center. **NO RETESTS** will be given. A student missing an exam because of a documented illness or emergency may be allowed to take a make-up exam. In such a circumstance, the student should make every reasonable attempt to contact the instructor before the exam is administered to the class (or as soon as possible). While make-up exams will cover the same content area as a missed exam, the exam format and specific questions may be different.

***The assignment of points will be according to the following protocol:***

Quizzes	150	points
Midterm Examinations	200	points
<u>Final Examination</u>	<u>150</u>	<u>points</u>
TOTAL	500	points

***Letter grades will be assigned as follows:***

<b>A</b>	90% or above in total points.
<b>B</b>	80-89.9% of total points.
<b>C</b>	65-79.9% of total points.
<b>D</b>	55-64.9% of total points.
<b>F</b>	Below 55% of total points or informal or incomplete official withdrawal from course.

<b>I</b>	Incomplete; given at the <b>INSTRUCTOR'S OPTION</b> when student is unable to complete a small part of the course because of circumstances beyond his or her control. It is the <b>STUDENT'S</b> responsibility to make up incomplete work. Failure to satisfactorily make up incomplete work within the appropriate time period will result in a grade change for "I" to the contingency grade identified by the instructor (see catalog).
<b>CR</b>	65% or above in total points; the student must indicate the intent to take the course as <b>CR/NC</b> in writing by the end of the 10th week of classes (see catalog).
<b>NC</b>	Below 65% of total points; this grade only available under the <b>CR/NC</b> option (see above and see catalog).
<b>N</b>	<b>NOT GIVEN BY THIS INSTRUCTOR EXCEPT UNDER EXTREMELY RARE CIRCUMSTANCES</b> (e.g., documented serious illness or emergency that prevents the student from officially withdrawing from the course); never used as an alternative for an "F" grade.
<b>W</b>	Official withdrawal from the course after the third week and prior to the end of the 10th week of classes (see catalog).

Waiver of minimum requirements for specific grades may be given only in unique situations at the instructor's discretion.

Students involved in academic dishonesty will receive an "F" grade for the course. Academic dishonesty is defined in WCC's college catalog.

## LEARNING RESOURCES

### *Required Textbook*

Reece, J.B., L.A. Urry, M.L. Cain, S.A. Wasserman, P.V. Minorsky, and R.B. Jackson. 2014. Campbell Biology, Tenth Edition. Benjamin Cummings. San Francisco.

### *Additional Resources*

Lecture outlines, PowerPoint slides (as pdf files), Podcasts of the lectures and other resources will be made available on the course Laulima site.

## STUDENT RESPONSIBILITIES

The student is expected to attend and actively participate in all course lectures and activities, and complete all quizzes and examinations on time.

The student is expected to be prepared in advance before the class sessions. Being prepared includes the following: having read text materials (e.g., textbook readings, and lecture outlines) assigned for that day's activities and bringing required work materials (e.g., textbook, handouts, writing supplies, etc.) to the session.

Any changes in the course schedule, such as examination dates, deadlines, etc., will be

announced ahead of time in class or on the course Laulima site (Laulima Announcements Page for BIOL 172). It is the student's responsibility to be informed of these changes. Students should visit the course Laulima site at least twice per week.

It is the student's responsibility to be informed about deadlines critical to making registration changes (e.g., last day of erase period and last day for making an official withdrawal).

The student should understand that **"INTRODUCTORY" DOES NOT MEAN "EASY"**. Students should expect a level of difficulty comparable to other 100-level science classes intended for majors in the discipline. When difficult concepts and detailed information are presented, it is the student's responsibility to take the appropriate steps to learn and understand these concepts and information.

Science courses at W.C.C. generally require two to three hours of independent private study time for each hour in class. However, because of the nature of the material presented in BIOL 172, more study time may be required (depends upon the student's science/biology background). It is the student's responsibility to allocate the appropriate time needed for study in an environment conducive to quality study. The student must budget time efficiently and be realistic about all personal and professional commitments that consume time.

## **HOW TO SUCCEED IN THIS CLASS**

Understanding biological science involves understanding many difficult concepts and vocabulary, not just knowing facts. The student should know that the details to these concepts are important. In addition, the student will be introduced to hundreds of new words. In some cases, words that are familiar in a context other than biology will be introduced in the context of biology. The student will need to understand and use these terms in a biological science context.

While the student will have lecture outlines (downloadable from the Laulima site), the student will not succeed in this class without taking careful lecture notes and reading the corresponding material in the textbook. The lecture outlines are not to be used in place of the student's own note taking. As soon as possible (best if done on the same day), the student should copy over these lecture notes filling in gaps and missing information by referring to the lecture outlines and textbook. The student should carefully review these rewritten lecture notes as often as possible. In addition to reviewing these notes before an exam, it would be useful for the student to try to rewrite these notes from memory.

In addition to copying over lecture notes, study activities should include drawing labeled diagrams or graphs that illustrate important biological phenomena (e.g., the internal structure of the cell, the stages of cell division, or the anatomy of the heart). These diagrams need not be works of art, but should clearly illustrate significant information. Before an exam, it would be useful to redraw these labeled diagrams and graphs from memory.

The student should make flashcards for each new vocabulary word presented (refer to lecture outlines for a lists of required terms). On one side of the card, write the word. On the other side, write the appropriate biological science definition for the word. The student should use these card for self-testing as often as possible. The student should also practice using the words to explain biological concepts.

The student should do all of the recommended study guide activities and review all of the Internet resource materials provided.

The textbook and the lecture outlines include useful study questions. The student should write out answers to all of these questions as though they were required assignments. Students could exchange these answers and provide constructive feedback to each other.

The student should read the textbook materials corresponding to a particular lecture before and after that lecture.

Students are recommended to establish study groups and study together. The students in these groups may test each other's knowledge and understanding of the information. They may also take turns teaching each other.

The student should ask the instructor to explain the things that the student does not understand.

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### **DISABILITIES ACCOMMODATION STATEMENT**

*If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, [lemke@hawaii.edu](mailto:lemke@hawaii.edu), or you may stop by Hale 'Ākoakoa 213 for more information.*

## BIOLOGY 172 - Introduction to Biology II

Spring 2015 - CRN 63081

### Tentative Televised Schedule of Lecture Topics

(\*Even though pages for the 9th edition are presented, this class no longer supports the 9th edition.)

Telecast Type	Days	Times	Channels
Broadcast	TR	11:30 a.m. - 12:30 p.m.	EDUTV channel 354 (Oceanic: O'ahu, Kaua'i, and Hawai'i), UHTV channels 355 (Oceanic: Statewide) & 55 (Hawaiian Telcom: O'ahu), UHVod channel 358 (Oceanic: Statewide)
Re-Broadcast	WF	12:30 - 1:30 a.m.	EDUTV channel 354 (Oceanic: O'ahu, Kaua'i, and Hawai'i), UHTV channels 355 (Oceanic: Statewide) & 55 (Hawaiian Telcom: O'ahu), UHVod channel 358 (Oceanic: Statewide), MCTV 354 (Maui only)
Re-Broadcast	Sun	5:00 -7:00 a.m.	EDUTV channel 354 (Oceanic: O'ahu, Kaua'i, and Hawai'i), UHTV channels 355 (Oceanic: Statewide) & 55 (Hawaiian Telcom: O'ahu), UHVod channel 358 (Oceanic: Statewide), MCTV 354 (Maui only)

Broadcast Date	Session Number	Lecture Topics	9th Edition* Text Pages	10th Edition Text Pages
13-Jan	1	Course Introduction		
15-Jan	2	The Diversity of Life: Protists	575-598	587-609
20-Jan	3	The Diversity of Life: Fungi The Diversity of Life: Primitive Terrestrial Plants Part I	578 636-652 600-606	590 648-665 612-618
22-Jan	4	The Diversity of Life: Primitive Terrestrial Plants Part II	604-615	616-628
27-Jan	5	The Diversity of Life: Seed Plants	618-634	630-646
	N/A	Review Supplemental Podcast Session 01 on "Animal Body Plans" from Laulima Site	518 654-664 670 853-854 882 899 916 919 1063 1110-1111	530 667-678 684 869 899 934 937 1080 1126-1127
29-Jan	6	The Diversity of Life: Invertebrate Animals Part I	662-664 666-676	677 680-710 712-716
3-Feb	7	The Diversity of Life: Invertebrate Animals Part II	667-669 676-688	677 680-710 712-716
5-Feb	8	The Diversity of Life: Invertebrate Animals Part III	688-701	677 680-710 712-716
10-Feb	9	The Diversity of Life: Craniates Part I: Fish Through Birds	697-720	533 712-734 1048
12-Feb	10	The Diversity of Life: Craniates Part II: The Mammals	720-733	525 735-749
17-Feb	11	Finish: Craniates Part II: The Mammals Plant Structure and Growth	720-733 101 108 119 120 631 736-754 773	525 735-749 101 108 118 119 643 753-769 787
	N/A	Review Supplemental Podcast Session 02 on "Plant Cell Types" from Laulima Site		757-759
19-Feb	12	Finish: Plant Structure and Growth Plant Transport Processes	101 108 119 120 631 736-754 773 108, 132-139, 764-782	101 108 118 119 643 753-769 787 108 130-138 778-796
24-Feb	13	Plant Nutrition	785-798	799-813
26-Feb	14	Plant Reproduction, Development and Growth	625-626 756-758 761 801-819	638-640 771-772 775 815-834
3-Mar	15	Plant Responses to Internal and External Signals	821-847	836-863
5-Mar	16	Introduction to Animal Architecture and Homeostasis Thermoregulation Part I	99, 852-859 11, 860-872, 1088	98 867-879 9 1104
10-Mar	17	Thermoregulation Part II Feeding, Digestion and Nutrition in Animals Part I	11, 860-872, 1088 875-895	879-887 892-912
12-Mar	18	Feeding, Digestion and Nutrition in Animals Part II	875-895	892-912

Broadcast Date	Session Number	Lecture Topics	9th Edition* Text Pages	10th Edition Text Pages
17-Mar	19	Animal Circulation	99 897-915 933	98 915-933 950
19-Mar	20	Gas Exchange in Animals Osmoregulation and Excretion Part I	679 915-927 953-971	695, 933-943 971-990
24-Mar		<b>SPRING BREAK</b>		
26-Mar		<b>SPRING BREAK</b>		
31-Mar	21	Osmoregulation and Excretion Part II The Nervous System Part I	953-971 985 1045-1082	971-990 1002-1003 1061-1098
2-Apr	22	The Nervous System Part II	985 1045-1082	1002-1003 1061-1098
7-Apr	23	The Nervous System Part III The Sense Organs Part I	985 1045-1082 1085-1103	1002-1003 1061-1098 1101-1119
9-Apr	24	The Sense Organs Part II Muscular Systems	1085-1103 858 1103-1115	1101-1119 873 1119-1126
14-Apr	25	Hormones and the Endocrine System	974-993	910-911 993-1010
16-Apr	26	Body Defenses and Immunity	389 929-950 1088	401 946-968 1104
21-Apr	27	Animal Reproduction	249 985 996-1011	253 1003 1013-1028
23-Apr	28	Animal Development	225 714 1012-1015 1021-1042	229 729 1028-1031 1037-1058
28-Apr	29	Ecological Principles Part I	1142-1147	1158-1181
30-Apr	30	Ecological Principles Part II	1170-1179 1182-1191 1194-1197	1184-1194 1197-1206 1208-1213
5-May	31	Ecological Principles Part III	1197-1210 1218-1231	1213-1225 1232-1248

\*Even though pages for the 9th edition are presented, this class no longer supports the 9th edition. Please plan on using the 10th edition for BIOL 172 in the Spring 2015.