



RANGER COLLEGE

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COURSE SYLLABUS

**General Biology I**

**BIOL 1406  
Gen Ed/Dual Credit**

**4 credit hours**

**FALL 2021**

**INSTRUCTOR:**

**Debbie Kemp**

INSTRUCTOR: Debbie Kemp  
EMAIL: [dkemp@rangercollege.edu](mailto:dkemp@rangercollege.edu) (best method of contact)  
OFFICE: Brown County Campus – no office  
HOURS: Online by appointment

### **I. Texas Core Curriculum Statement of Purpose**

Through the Texas Core Curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning.

### **II. Course Description**

Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included.

### **III. Required Background or Prerequisite**

Passing score on TSI Reading section or equivalent alternate test is recommended.

### **IV. Required Textbook and Course Materials**

**YOU WILL HAVE TO PAY FOR THE CONNECT ACCESS & EBOOK IF YOU ARE A DUAL CREDIT STUDENT.**

**You will not receive a hard copy of the text, but will have the option to order a loose-leaf copy once you have registered for the McGraw-Hill Connect website. The easiest and fastest method to get access to Connect is to go to “Start Here!”, select “Get To Know Connect” and you will be taken to the website where you will register, pay for the Connect access & get started.**

Connect Access Card for Biology: Concepts and Investigations

Hoefnagels 5e: Connect AC (2 semester) – **9781264354085**

### **V. Course Purpose**

Life Science courses focus on describing, explaining and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

## VI. Learning Outcomes

1. Describe the process of science as a way to understand the natural world.
2. Describe the cell as the basic unit of life.
3. Describe the major metabolic pathways in cellular respiration and photosynthesis, and the role of enzymes and high-energy molecules, such as ATP, in these processes.
4. Describe the structure and expression of the genetic material in living organisms.
5. Describe the process of cellular division.
6. Describe the mechanics of passing characteristics from parent to offspring.
7. Describe the mechanism of organic evolution and adaptation.

## VII. Core Objectives

This course meets the following of the six Core Objectives established by Texas:

- Critical Thinking Skills (CT)** – Creative thinking, innovation, inquiry, and analysis; evaluation and synthesis of information
- Communication Skills (COM)** – effective development, interpretation and expression of ideas through written, oral, and visual communication
- Empirical and Quantitative Skills (EQS)** – The manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- Teamwork (TW)** – The ability to consider different points of view and to work effectively with others to support a shared purpose or goal
- Social Responsibility (SR)** – Intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities
- Personal Responsibility (PR)** – The ability to connect choices, actions, and consequences to ethical decision-making

## VIII. Methods of Instruction

Reading/lectures/notes

Online practice, homework

LearnSmart with Connect Lab Access

Labs in which major biological principles will be demonstrated by examination of specimens, conducting experiments and viewing videos virtually.

**IX. Methods of Assessment**

Exams will consist of multiple choice and short answer questions and will cover all material discussed in class or in reading assignments. Each question will be graded as correct or incorrect in accordance with information in the text, lectures and readings. Exam grades will be taken as the points correct.

There will be NO MAKEUP EXAMS.

ONE LAB & 3 HOMEWORK (Practice/Learn Smart) will be dropped on the last day of class. (THIS REPRESENTS YOUR EXTRA CREDIT...there will be no other extra credit opportunities.)

The course grade will be computed as follows:

SMARTBOOK ASSIGNMENTS	20%
UNIT EXAMS	30%
LAB	25%
<u>FINAL EXAM</u>	<u>25%</u>

Letter grades will be assigned as follows:

Grading scale: A = 90-100%    B = 80-89    C = 70-79    D = 60-69    F = Below 60

**X. Course/Classroom Policies**

- 1) THE FINAL EXAM MUST BE PROCTORED!!!! This means that you will either need to come to one of the Ranger College campuses to take the exam OR use the online proctoring website **ProctorU**. You can find a link to **ProctorU** on blackboard.
- 2) It is important that you understand there is both a LECTURE COMPONENT (75%) and a LAB COMPONENT (25%), however, your grade will be ONE grade as a combination of both. You will need to be very diligent in staying on top of both parts. Please check the calendar weekly to keep up with assignments and their due dates.

- 3) **YOUR TEXTBOOK IS INCLUDED IN IncludEd!!! (General Ed)** You MUST register through blackboard so that you will have access to the CONNECT site (with LABS), if you have trouble connecting to this please email me. The BEST way to assure you are getting the correct version of the electronic text is to go through your blackboard!! Click on the very first assignment “Get To Know Connect”.

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Instructions for connecting are ON BLACKBOARD!

- Assignments and Labs are assigned and are due week by week.
- Videos (YouTube) are provided in some chapters for added understanding ( these are optional)
- Some weeks will have more labs assigned than others. Make sure you check the assignment schedule early each week.
- Exams are scheduled according to weekly assignments.
- Make sure that you check the schedule for exams week by week.
- Late exams will be completed for a reduced grade.
- Exams will be given on Sunday evenings between 6-10pm. Exams may not be taken early.
- FINAL EXAM TBA

### XI. Course Outline/Schedule

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Course Calendar

**For Gen Ed. --YOUR TEXTBOOK IS INCLUDED IN IncludEd!!!**

Week 1			
May 24 - 30		Get to Know Connect	Exam
		Virtual Lab Tutorial	Lab
		Lab Safety-Hand Washing	Lab
		Lab Safety-Personal Safety	Lab
		Smart Book Ch 1. - <b>Science</b>	

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Due: August 8		Scientific Method - Project	Project
		Applying the Scientific Method:Pillbugs	Lab
<b>Week 2</b>			
May 31-June 6		SmartBook Ch. 2 <b>Chemistry</b>	SB
		Molecules and Elements	Video
		Molecules of Life	Video
		Chemical Composition of Cells	Lab
		Spectro	Lab
<b>Week 3</b>			
June 7 - 13		Smart Book Ch.3 <b>Cells</b>	SB
		Microscopy: Oil Immersion	Lab
		Microscopy: Bright Field	Lab
		Microscopy: Wet Mount	Lab
		Cells	Viddo
		Exam Review: Ch 1,2,3	Review
Sunday, June 13, 2021		Exam : Ch. 1,2,3	Exam
<b>Week 4</b>			
June 14 -20		SmartBook Ch. 7 <b>DNA Structure</b>	SB
		DNA/RNA	Video
		DNA/RNA II	Video
		Osmosis-Selectively Perm Membrane	Lab
		Osmosis-Elodea Leaves	Lab
		Osmosis-Red Blood Cells	Lab
Friday, June 18, 2021		Project Design Due	Project
		Exam Review Chapter 7	Review
<b>Week 5</b>			
June 21-June 27		SmartBook Chapter 8 <b>DNA Replication</b>	SB
		DNA Replication	Video
		DNA Biology & Technology-Gel Electro	Lab
		DNA Biology & Technology-DNA Isolation	Lab
<b>Week 6</b>			
June 28 - July 4		SmartBook Chapter 9	SB
		DNA Technology	Video
		Cell Division-Examining Mitosis	Lab
		Exam Review: Ch. 8 & 9	Review
Sunday, July 04, 2021		Exam Chapters 7,8,9	Exam
<b>Week 7</b>			
July 5 - July 11		Smart Book Ch. <b>10 Inheritaace</b>	SB
		Mendelian Genetics: Fruit Fly Characteristics	Lab
		Mendelian Genetics: Monohybrid Cross	Lab
		Mendelian Genetics: Monohybrid Plant	Lab
		Inheritance	Video
		Chromosomal Inheritance	Video
		Exam Review: Ch 10	Review
Sunday, July 11, 2021		Exam : Chapter 10	Exam

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<b>Week 8</b>			
July 12 - July 18		SmartBook Ch 11 <b>DNA Technology</b>	SB
		DNA Technology	Video
		Mendelian Genetics: Dihybrid Fruitfly	Lab
		Mendelian Genetics: Dihybrid Plant	Lab
		Mendelian Genetics: X-linked	Lab
		DNA Technology II	Video
		Gel Electrophoresis	Lab
		Chapter 11 Review	Review
Sunday, July 18, 2021		Exam: Chapter 11	Exam
<b>Week 9</b>			
July 19-July25		SmartBook Chapter 12 <b>Evolution</b>	SB
		Evolution	Video
		Natural Selection: Bacteria	Lab
		Natural Selection: Insects	Lab
<b>Week 10</b>			
July 26 - August 1		SmartBook Chapter 13 <b>Evidence of Evolution</b>	SB
		Evidence of Evolution	Video
		Fossils	Lab
		Exam Review: Ch. 12 & 13	Review
Sunday, August 01, 2021		Exam: Chapter 12, 13	Exam
Sunday, August 05, 2021		Scientific Method: Project Due	
TBA		Final Exam	

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## XII. Non-Discrimination Statement

Admissions, employment, and program policies of Ranger College are nondiscriminatory in regard to race, creed, color, sex, age, disability, and national origin.

## XIII. ADA Statement

Ranger College provides a variety of services for students with learning and/or physical disabilities. Students are responsible for making initial contact with the Ranger College Counselor, Gabe Lewis (glewis@rangercollege.edu). It is advisable to make this contact before or immediately after the semester begins.