



# **INSTRUCTIONAL PACKAGE**

BIO 127  
Principles of Animal Science

Effective Term

Fall 2024/Spring 2025/Summer 2025

# INSTRUCTIONAL PACKAGE

## Part I: Course Information

Effective Term: Fall 2024/Spring 2025/Summer 2025

COURSE PREFIX: BIO 127

COURSE TITLE: Principles of Animal Science

CONTACT HOURS: 3

CREDIT HOURS: 3

**RATIONALE FOR THE COURSE:** Completion of BIO 127 prepares students for veterinary nursing degree programs and for other related animal science fields.

**COURSE DESCRIPTION:** This course is an introduction to biological principles of animals under the control of human kind. Topics include: nutrition, health, and breeding.

### **PREREQUISITES/CO-REQUISITES:**

Credit level BIO 101 Minimum Grade of C or Credit level BIO 101 Minimum Grade of TC or Credit level BIO 105 Minimum Grade of C or Credit level BIO 105 Minimum Grade of TC

\***Online/Hybrid** courses require students to complete the [Distance Learning Orientation Video](#) prior to enrolling in an online course.

### **REQUIRED MATERIALS:**

Please visit the [BOOKSTORE](#) online site for most current textbook information.

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

### **ADDITIONAL REQUIREMENTS:**

For Hybrid/Online Students Only: Each student will be required to view an orientation PowerPoint presentation during the first week of class. This presentation can be found on the course homepage in D2L under News. After viewing the presentation, all online students must complete the orientation quiz, which can be found under the dropdown assignment menu. A student will not be considered officially enrolled in the course until the presentation has been viewed and the quiz completed with a 100% score. Any submitted work from the student including discussion posts, assignments, etc. will not be given a grade until the presentation has been viewed and the quiz has been submitted. Failure to view the presentation and take the quiz before midnight on the last day to add/drop classes will result in the student being automatically dropped from the course.

### **TECHNICAL REQUIREMENTS:**

Access to Desire2Learn (D2L), HGTC's learning management system (LMS) used for course materials.

Access to myHGTC portal for student self-services.

College email access – this is the college’s primary official form of communication.

### **STUDENT IDENTIFICATION VERIFICATION**

Students enrolled in online courses will be required to participate in a minimum of one (1) proctored assignment and/or one (1) virtual event to support student identification verification. Please refer to your Instructor Information Sheet for information regarding this requirement.

### **CLASSROOM ETIQUETTE:**

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

**NETIQUETTE:** is the term commonly used to refer to conventions adopted by Internet users on the web, mailing lists, public forums, and in live chat focused on online communications etiquette. For more information regarding Netiquette expectations for distance learning courses, please visit [Online Netiquette](#).

### **ACADEMIC DISHONESTY:**

All forms of academic dishonesty, as outlined in the Student Code in the HGTC catalog, will NOT be tolerated and will result in disciplinary action. Anyone caught cheating (Defined in the code as: “a. Copying from another student's test or answer sheet. b. Using materials or equipment during a test not authorized by the person giving the test. c. Collaborating with any other person during a test without permission. d. Knowingly obtaining, using, buying, selling, transporting, or soliciting in whole or in part the contents of a test prior to its administration. e. Bribing or coercing any other person to obtain tests or information about tests. f. Substituting for another student or permitting any other person to substitute for oneself. g. Cooperating or aiding in any of the above.”) or committing plagiarism (Defined in the code as: “(1) the appropriation of any other person's work and the unacknowledged incorporation of that work in one's own work or (2) submitting content for academic purposes that are created by artificial intelligence, technology platforms, or writing services and representing that such content is the person’s own work product.”) will be given a grade of a zero for that assignment and reported to the Senior VP of Academic Affairs, in accordance with the student handbook. A second offense will result in the student being withdrawn from the course with a W or WF at the professor’s discretion and charges being filed with the Chief Student Services Officer.

## **Part II: Student Learning Outcomes**

### **COURSE LEARNING OUTCOMES and ASSESSMENTS\*:**

#### **Lecture Student Learning Outcomes:**

##### **Chapter 1 Introduction to the Animal Sciences**

Define animal science and all of its component parts.

Describe how, why, and when domestication occurred.

Give an overview of the distribution of agricultural animals worldwide.

Explain to a nonagriculturist the contributions of domestic animals to humankind and the value of

studying animal science.

Describe the worldwide livestock revolution and its implications.

## **Chapter 2 The Value of Animals to Humanity**

Describe the value of animal products in providing for the world's food.

Explain the current rates of growth or decline of animal products on a worldwide basis.

Elaborate on the milk-producing species, state their importance to world milk production, and understand what is happening to world milk production.

Describe the value of eggs in feeding the world's people.

Develop a modest understanding of some miscellaneous food uses for the world's animals.

Explain the value of animal products in the human diet.

Give a good overview of all the many nonfood uses humans have for the world's animals.

## **Chapter 3 Factors Affecting World Agricultural Structure**

Explain the process of adaptation.

List the five major categories of environmental stressors and tell how animals react to them.

Describe the climatic environments of the world.

Summarize how climate and natural vegetation are tied together.

Explain how social and cultural differences affect agriculture.

Integrate information on levels of economic and agricultural development to explain how they are link

## **Chapter 5 Introduction to Nutrition**

Define nutrition and understand the reasons for studying nutrition.

Explain what a nutrient is and know the difference between dietary essential and nonessential nutrients, classify the nutrients, and list the 50 dietary essential nutrients.

Describe the general uses of nutrients in the body and discuss the major factors that affect an animal's needs for nutrients.

Explain in detail the three major types of animal trials that nutritionists use.

Define and explain feedstuff analysis.

Summarize the feeds evaluation procedures described in this chapter.

## **Chapter 6 The Gastrointestinal Tract & Nutrition**

Describe the methods of the breakdown of food.

Classify digestive systems according to stomach type and type of diet consumed.

Describe the steps of digestion.

Identify the differences and similarities in the digestive processes of animals.

Explain the importance of the complex stomach of the ruminant and its benefits to the animal.

## **Chapter 7 Feedstuffs Classification**

Describe feedstuff classification and identify feedstuff categories and characteristics.

Identify the nutritive characteristics in various feedstuff categories.

## **Chapter 8 Genetics**

Explain the role that genetics plays in animal production.

Describe the location of genes within a cell.

Explain the process of cellular division with relation to the replication of cells containing a full

complement of genetic information.

Explain the process of cellular division that ultimately produces cells containing only half of the genetic information.

Describe how variation in traits is passed from parent to offspring.

Describe how gene frequencies change in a population.

Explain the concept of relationship between individuals.

Describe several systems of mating individuals.

Summarize the implications of genetic engineering, the promise it holds for future animal production, and the opportunities that animals will have to provide even greater benefits to humanity.

## **Chapter 9 Animal Breeding**

Define animal breeding and explain its contributions to animal science.

Describe the general principles of animal breeding as it applies to beef cattle.

Define heritability and genetic correlations.

Explain how to use EPDs in beef cattle breeding.

Describe the uses and benefits of a beef cattle sire summary.

Describe the general principles of animal breeding as it applies to dairy cattle.

Explain why associations among traits are so important to dairy cattle selection.

Describe the DH1 system and explain its use in dairy cattle selection.

List the ways in which swine genetic improvement is similar to and different from the other major species.

Describe the difference in the way breeds influence the swine industry compared to the other industries.

Describe the general principles of animal breeding as it applies to sheep.

## **Chapter 11 Animal Reproduction**

Describe how the endocrine system drives the production of gametes.

Identify the various anatomical features of female and male reproductive systems.

Compare and contrast the functions of the male and female gonads.

State how conception, pregnancy, and parturition occur.

Discuss the considerable influence of the environment on reproductive function.

Describe the uses and advantages of the technologies recently employed in animal reproduction.

## **Chapter 12 Lactation**

Describe the process of lactation.

List the components of milk.

Identify the major components of the mammary gland.

Identify and describe a typical lactation curve.

Explain the problem of lactose intolerance.

Describe the process by which various components are added to milk.

Compare and contrast the effect that species has on milk composition.

Explain the process by which BST increases milk production.

## **Chapter 13 Animal Behavior & Handling**

Describe the overall field of animal behavior and explain why it is important.

Explain the individual areas of study in animal behavior.

Cite the general effects of handling on livestock production.

Discuss how animal temperament and handling interact.  
 Describe the role of fear and fear memories in handling.  
 List the benefits of training animals to be handled and to accept restraint.  
 Cite the effects of novelty, vision, noise, and shadows on livestock movement.  
 Discuss the concept of flight zone.  
 Identify the role of genetics in handling.  
 Outline the basics of handling facility layout.

### **Chapter 14 Animal Health**

Explain the nature of disease.  
 Describe the causes of disease in general terms.  
 Outline a procedure for diagnosing disease.  
 Describe the body's defenses against disease.  
 Explain basic functions of the immune system.  
 Describe the elements of herd health.  
 Identify the effects of animal disease on human well-being.  
 Describe the elements of regulatory animal medicine.

### **Chapters 15-25 The Animal Industries, Project Based**

For beef cattle, dairy cattle, poultry, swine, sheep & goats, horses, aquaculture, pets & companion animals, lamoids, and rabbits:

Explain the place of the species in U.S. agriculture (if applicable).  
 Discuss the purpose and value of the animal as a U.S. industry (if applicable).  
 Give a brief history of the animal's industry in the United States.  
 Describe the animal's industry structure and give an accurate accounting of where the animal's industry is physically located in the United States (if applicable).  
 Discuss the role of genetics in the present and future of the animal industry.  
 Outline the basis of reproductive management of the animal.  
 Describe the feed supply of the animal or the method of feeding.  
 Discuss common health challenges of the animal.  
 Discuss trends and areas of concern in the animal's industry, including factors that will influence the industry in the future.

***\*Students – please refer to the Instructor's Course Information sheet for specific information on assessments and due dates.***

## **Part III: Grading and Assessment**

### **EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS\***

Students' performance will be assessed, and the weight associated with the various measures/artifacts are listed below.

#### **EVALUATION\***

Lecture Exams	50%
Other Assessments (quizzes, discussions, etc.)	20%
Project	15%

Final Exam	15%
	100%

***\*Students, for the specific number and type of evaluations, please refer to the Instructor's Course Information Sheet.***

### **GRADING SYSTEM:**

Please note the College adheres to a 10-point grading scale A = 100 – 90, B = 89- 80, C = 79 – 70, D = 69 – 60, F = 59 and below.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the [academic calendar](#) for deadlines for add/drop. You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

## **Part IV: Attendance**

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of 80 percent (80%) of their classes in order to receive credit for any course. Due to the varied nature of courses taught at the college, some faculty may require up to 90 percent (90%) attendance. Pursuant to 34 Code of Federal Regulations 228.22 - Return to Title IV Funds, once a student has missed over 20% of the course or has missed two (2) consecutive weeks, the faculty is obligated to withdraw the student and a student may not be permitted to reenroll. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

**For online and hybrid courses**, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, and if you use a testing center other than those provided by HGTC, the center may charge a fee for its services.

### **Science Department Attendance Policies**

For a 15-week course (fall and spring) or a 10-week course (summer), the allowed number of absences for a MW or TR class is as follows: 4 absences are allowed for lecture and 2 are allowed for lab, regardless of reason. For a lecture class that meets once a week, the allowed number of absences is 2.

For a 7-week fast-paced course (fall and spring) or a 5-week fast-paced course (summer), the allowed number of absences is as follows: 1 absence is allowed for lecture and 1 for lab, regardless of reason.

When a student surpasses the allowed number of absences, the student will be dropped automatically from the course with a W or a WF. Remember, an absence is an absence, no matter if it is excused or

not!

### **Online/Hybrid Attendance:**

Students enrolled in distance learning courses (hybrid and online) are required to maintain contact with the instructor on a regular basis to be counted as "in attendance" for the course. All distance learning students must participate weekly in an Attendance activity in order to demonstrate course participation. Students showing no activity in the course for two weeks (these weeks do not need to be consecutive) will be withdrawn due to lack of attendance.

### **Lab Attendance for Hybrid Courses:**

Students in hybrid classes in which labs meet weekly, are allowed two (2) lab absences. Students in hybrid labs that only meet 5 or 6 times during the semester, must attend all lab sessions for its entirety. When a student surpasses the allowed number of absences, the student will be dropped automatically from the course with a W or a WF.

## **Part V: Student Resources**



### **THE STUDENT SUCCESS AND TUTORING CENTER (SSTC):**

The SSTC offers to all students the following **free** resources:

1. **Academic tutors** for most subject areas, **Writing Center support**, and **college success skills**.
2. Online **tutoring** and academic support resources.
3. Professional and interpersonal communication **coaching** in the EPIC Labs.

Visit the [Student Success & Tutoring Center](#) website for more information. To schedule tutoring, contact the SSTC at [ssc@hgtc.edu](mailto:ssc@hgtc.edu) or self-schedule in the Penji iOS/Android app or at [www.penjiapp.com](http://www.penjiapp.com). Email [ssc@hgtc.edu](mailto:ssc@hgtc.edu) or call SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455, or go to the [Online Resource Center](#) to access on-demand resources.



### **STUDENT INFORMATION CENTER: TECH Central**

TECH Central offers to all students the following **free** resources:

1. **Getting around HGTC:** General information and guidance for enrollment, financial aid, registration, and payment plan support!
2. Use the [Online Resource Center \(ORC\)](#) including Office 365 support, password resets, and username information.



3. **In-person workshops, online tutorials and more services** are available in Desire2Learn, Student Portal, Degree Works, and Office 365.
4. **Chat with our staff on TECH Talk**, our live chat service. TECH Talk can be accessed on the student portal and on TECH Central's website, or by texting questions to (843) 375-8552.

Visit the [Tech Central](#) website for more information. Live Chat and Center locations are posted on the website. Or please call (843) 349 – TECH (8324), Option #1.



## HGTC LIBRARY:

Each campus location has a library where HGTC students, faculty, and staff may check out materials with their HGTC ID. All three HGTC campus libraries are equipped with computers to support academic research and related schoolwork; printing is available as well. Visit the [Library](#) website for more information or call (843) 349-5268.

## STUDENT TESTING:

Testing in an **online/hybrid** course and in **make-up exam** situations may be accomplished in a variety of ways:

- Test administered within D2L
- Test administered in writing on paper
- Test administered through Publisher Platforms (which may have a fee associated with the usage)

Furthermore, tests may have time limits and/or require a proctor.

Proctoring can be accomplished either face-to-face at an approved site or online through our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.

The **Instructor Information Sheet** will have more details on test requirements for your course.

## DISABILITY SERVICES:

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to HGTC's [Accessibility and Disability Service webpage](#). The Accessibility and Disability Services staff will review documentation of the student's disability and, in a confidential setting with the student, engage in an interactive process to develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided. Students will need to reach out to the Accessibility and Disability Services staff each semester to

renew their accommodations.

**COUNSELING SERVICES:**

HGTC Counseling Services strives to optimize student success through managing personal and academic concerns that may interfere with achieving educational goals. Staff are available to every student for assistance and guidance on personal matters, academic concerns and other areas of concern. HGTC offers free in-person and telehealth counseling services to students. For more information about counseling services, please reach out to [counseling@hgtc.edu](mailto:counseling@hgtc.edu) or visit the website the [Counseling Services webpage](#).

**STATEMENT OF EQUAL OPPORTUNITY/NON-DISCRIMINATION STATEMENT:**

Horry-Georgetown Technical College shall not discriminate in employment or personnel decisions or in student admissions or in student decisions, or in all other segments of the College community on the basis of race, color, sex, national or ethnic origin, age, religion, disability, marital or family status, veteran status, political ideas, sexual orientation, gender identity, or pregnancy, childbirth, or related medical conditions, including, but not limited to, lactation, in the educational programs and activities which it operates, and the college is prohibited from discrimination in such manner by applicable laws. Practices and requirements for nondiscrimination extend to the enrollment of students in programs and activities of the College and employment by the College.

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Tamatha Sells, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5218, [tamatha.sells@hgtc.edu](mailto:tamatha.sells@hgtc.edu) or to the US Department of Education Office of Civil Rights. (Telephone: 800-421-3481/Email: [OCR@ed.gov](mailto:OCR@ed.gov)).

Other employee and applicant inquiries concerning the federal laws and their application to the College may be directed to Jacquelyne Snyder, Vice President, Human Resources and Employee Relations & the College's Affirmative Action/Equal Opportunity Officer, Horry-Georgetown Technical College, Building 200C, Room 205B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5212, [jacquelyne.snyder@hgtc.edu](mailto:jacquelyne.snyder@hgtc.edu).

Other student and prospective student inquiries concerning the federal laws and their application to the College or any student decision may be directed to Dr. Melissa Batten, Vice President, Student Affairs, Section 504 & Title II Coordinator Horry-Georgetown Technical College, Building 1100C, Room 107A, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5228, [melissa.batten@hgtc.edu](mailto:melissa.batten@hgtc.edu).

## **TITLE IX REQUIREMENTS:**

Title IX of the Education Amendments of 1972 protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination.

HGTC prohibits the offenses of domestic violence, dating violence, sexual assault, and stalking and will provide students, faculty, and staff with necessary information regarding prevention, policies, procedures, and resources.

Any student, or other member of the college community, who believes that they have been a victim of sexual harassment, domestic violence, dating violence, sexual assault, or stalking may file a report with the college's Title IX Coordinator or campus law enforcement\*.

\*Faculty and Staff are required to report these incidents to the Title IX Coordinator when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

For more information, contact Tamatha Sells, Title IX Coordinator, Conway Campus, Building 1100C, Room 107B, 843-349-5218, [tamatha.sells@hgtc.edu](mailto:tamatha.sells@hgtc.edu).

## **PREGNANCY ACCOMMODATIONS**

Under Title IX, colleges must not exclude a pregnant student from participating in any part of an educational program. Horry-Georgetown Technical College is committed to ensuring that pregnant students receive reasonable accommodations to ensure access to our educational programs.

Students should advise the Title IX Coordinator of a potential need for accommodations as soon as they know they are pregnant. It is extremely important that communication between student, instructors, and the Title IX Coordinator begin as soon as possible. Each situation is unique and will be addressed individually.

Title IX accommodations DO NOT apply to Financial Aid. Financial Aid regulations do not give the College any discretion in terms of Financial Aid eligibility.

Certain educational programs may have strict certification requirements or requirements mandated by outside regulatory agencies. Therefore, in some programs, the application of Title IX accommodations may be limited.

To request pregnancy accommodations, please complete the [Pregnancy Intake Form](#).

