

# ANAT R101: GENERAL HUMAN ANATOMY

**Originator**

mabram

**College**

Oxnard College

**Discipline (CB01A)**

ANAT - Anatomy

**Course Number (CB01B)**

R101

**Course Title (CB02)**

General Human Anatomy

**Banner/Short Title**

General Human Anatomy

**Credit Type**

Credit

**Start Term**

Fall 2021

**Formerly**

ANAT 100

**Catalog Course Description**

This course is organized into two parts: lecture and laboratory. The lecture portion is an introduction to gross anatomy as well as organization and histology of human organ systems. The laboratory portion reinforces the lecture material and consists of hands-on experiments and demonstrations used to illustrate the principles and concepts of anatomy. These include but are not limited to microscope use, model and specimen examination, dissection of the cat as well as other livestock organs and demonstration of the dissected human cadaver. This course meets the requirements of students anticipating transfer to university, medical school, dental school, holistic medicine, kinesiology programs and other health care certificated programs.

**Taxonomy of Programs (TOP) Code (CB03)**

0410.00 - Anatomy and Physiology

**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**

Hospital operating theaters, science center displays (Body Worlds), county coroners office and hospitals for visualization of morgue and autopsy.

**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**

35

**Maximum Contact/In-Class Lecture Hours**

35

**Activity**

**Laboratory**

**Minimum Contact/In-Class Laboratory Hours**

105

**Maximum Contact/In-Class Laboratory Hours**

105

**Total in-Class****Total in-Class****Total Minimum Contact/In-Class Hours**

140

**Total Maximum Contact/In-Class Hours**

140

**Outside-of-Class****Internship/Cooperative Work Experience**

Paid

Unpaid

**Total Outside-of-Class****Total Outside-of-Class****Minimum Outside-of-Class Hours**

70

**Maximum Outside-of-Class Hours**

70

**Total Student Learning****Total Student Learning****Total Minimum Student Learning Hours**

210

**Total Maximum Student Learning Hours**

210

**Minimum Units (CB07)**

4

**Maximum Units (CB06)**

4

**Prerequisites**

BIOL R101 or BIOL R101H; and BIOL R101L; and MATH R005 or MATH R015; and ENGL R097 or eligibility for ENGL R101 as determined by the college's multiple measures assessment process.

**Entrance Skills****Entrance Skills**

An understanding of cell function and structure, organizational complexity, chemical constituents required for living systems, metabolism, evolution, ecology, environmental awareness, biotechnology, application of the scientific method and critical thinking in the relationship of biology to society. Utilization of common laboratory equipment and metric system measurement, microscope function and identification of cell types, spectrophotometer for concentration of compounds in solutions, as well as the ability to write coherent and concise essays describing biological processes, utilizing proper grammar, syntax, spelling and idiomatic usage including the concepts of documentation. The ability to solve general college level math problems, graph and plot equations and variables, as well as perform mathematical operations that would apply for health care related fields.

**Prerequisite Course Objectives**

BIOL R101-Describe the scientific method of inquiry as it relates to biological organisms.

BIOL R101-Describe the structure and function of cells and common organelles and their relationship to tissues, organs, and organ systems.

BIOL R101-Explain the chemical and molecular basis for human nutritional needs.

BIOL R101-Explain energy flow through the biological world with reference to photosynthesis, cellular respiration, and ecological cycles.

BIOL R101-Interpret inheritance patterns and describe the mechanisms involved in meiosis and mitosis.

BIOL R101H-Describe the scientific method of inquiry as it relates to biological organisms.

BIOL R101H-Describe the structure and function of cells and common organelles and their relationship to tissues, organs, and organ systems.  
BIOL R101H-Explain the chemical and molecular basis for human nutritional needs.  
BIOL R101H-Explain energy flow through the biological world with reference to photosynthesis, cellular respiration, and ecological cycles.  
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  
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

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### **Requisite Justification**

#### **Requisite Type**

Prerequisite

#### **Requisite**

BIOL R101

#### **Requisite Description**

Course not in a sequence

#### **Level of Scrutiny/Justification**

Content review

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#### **Requisite Type**

Prerequisite

#### **Requisite**

BIOL R101H

#### **Requisite Description**

Course not in a sequence

#### **Level of Scrutiny/Justification**

Content review

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#### **Requisite Type**

Prerequisite

#### **Requisite**

BIOL R101L

#### **Requisite Description**

Course not in a sequence

#### **Level of Scrutiny/Justification**

Content review

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#### **Requisite Type**

Prerequisite

#### **Requisite**

MATH R005

#### **Requisite Description**

Course not in a sequence

**Level of Scrutiny/Justification**

Content review

**Requisite Type**

Prerequisite

**Requisite**

MATH R015

**Requisite Description**

Course not in a sequence

**Level of Scrutiny/Justification**

Content review

**Requisite Type**

Prerequisite

**Requisite**

ENGL R097

**Requisite Description**

Course not in a sequence

**Level of Scrutiny/Justification**

Content review

**Student Learning Outcomes (CSLOs)****Upon satisfactory completion of the course, students will be able to:**

- |   |  |
|---|--|
| 1 | Analyze the concepts of evolution as they relate to the study of human anatomy, and will exhibit their evolutionary understanding in a compositional format. |
| 2 | Identify and apply terms describing movement and recognition of components of the skeletal-muscular system.  |

**Course Objectives****Upon satisfactory completion of the course, students will be able to:**

- |    |  |
|----|--|
| 1  | Discuss both the gross and macro-anatomical structures and basic functions of the human system using accepted anatomical terms, planes, and points of reference.   |
| 2  | Distinguish the major cell and tissue types based on their morphology and functional characteristics.  |
| 3  | Predict, explain and analyze which cell or tissue type would be located in a given region based on the known characteristics of cells and tissues.   |
| 4  | Identify and recognize the parts of the human organ systems focusing most intently on the integument, skeletal, muscular, nervous, endocrine, digestive, circulatory, respiratory and uro-genital systems. |
| 5  | Use a light microscope competently and report accurately the observation made while using prepared slides.   |
| 6  | Describe the key structural features of different human cell and major tissue types.   |
| 7  | Identify and describe the anatomy of the systems of the human body.  |
| 8  | Relate structure and function at the cellular through system levels of organization of human body systems.   |
| 9  | Describe structural and anatomical changes that occur in disease, injury, congenital malformation or aging of the human body systems.  |
| 10 | Use the tools and techniques required to complete a detailed dissection of cat and other livestock organs. Compare and contrast cat and other livestock organs to human examples.                          |

## Course Content

### Lecture/Course Content

1. Levels of Organization
  - a. The Human condition
  - b. Microscopy
  - c. Histology
  - d. Reference points
2. The Animal Cell, Cell Types and Tissues
  - a. Cellular organelles and functions
  - b. Overview of cell types
  - c. The Four primary tissue types
3. Epithelial Tissue Types
  - a. Functional definitions of epithelial tissue
  - b. Types of epithelial tissue
  - c. Locations of the different types of epithelial tissue
  - d. Gland types and structure
4. Connective Tissue Types
  - a. Functional definitions of connective tissue
  - b. Types of connective tissue
  - c. Locations of different types of connective tissue
5. Integument
  - a. Epidermis, dermis, hypodermis
  - b. Functions of the integument
  - c. Components of the integument (i.e. sensory organs, glands, capillary plexus, etc...)
6. Bone and Cartilaginous Tissue
  - a. Organization of bone
  - b. Origin of bone, growth and remodeling
  - c. Types and functions of cartilaginous tissue
  - d. Types and function of osseous tissue
7. Skeletal System
  - a. Functions of the skeletal system
  - b. Types of bones
  - c. Axial vs. appendicular skeleton
  - d. Joints and articulations
8. Muscle Tissue
  - a. Types of muscle tissue
  - b. Locations, functions, and general characteristics of muscle tissue types
  - c. Organization and naming of skeletal muscle
  - d. Muscle actions
9. Skeletal Musculature
  - a. Axial muscles
  - b. Appendicular muscles
10. Circulatory System
  - a. Blood components
  - b. Heart
  - c. Vasculature
  - d. Functions of the circulatory system
11. Lymphatic System
12. Respiratory System
  - a. Organization of the lungs
  - b. Conduction vs. respiratory zones
  - c. Functions of the respiratory system
13. Nervous Tissue
  - a. Neurons
  - b. Glial cells, their function and location
14. Nervous System
  - a. Organization of the central and peripheral nervous systems
  - b. Functions of the different regions of the nervous system

- c. Meninges
  - d. Cranial nerves, sensory and motor nerves
  - e. Autonomic nervous system
15. Digestive System
  16. Endocrine System
    - a. Location and function of different organs
    - b. Homeostasis and negative feedback control
  17. Uro-genital Systems
    - a. Parts and locations of the urinary system
    - b. Functions and blood supply of the kidney
    - c. Male and female reproductive systems
    - d. Fertilization and embryology
  18. Learning Techniques
    - a. Dissection
    - b. Memorization
    - c. Comparison

### Laboratory or Activity Content

The laboratory component of this course includes greater than 80% hands-on learning supporting the course outcomes. The laboratory content includes but is not limited to:

1. Identification of microscopic structures and tissues.
2. Identification of bones and bone features.
3. Identification of skeletal musculature and muscle features.
4. Identification of internal organs.
5. Dissection of organs or observation of dissected organs.
6. Dissection of organisms or observation of dissected organisms.
7. Identification of structures on models.
8. Group lab activity, interaction and communication.

### 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  
 Skills demonstrations  
 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):**

Essays  
 Group projects  
 Individual projects  
 Laboratory activities  
 Objective exams  
 Projects  
 Problem-Solving Assignments  
 Quizzes  
 Research papers  
 Skills demonstrations

### Instructional Methodology

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

Audio-visual presentations  
 Computer-aided presentations  
 Collaborative group work  
 Class activities  
 Class discussions  
 Distance Education  
 Demonstrations  
 Group discussions  
 Guest speakers  
 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, evolution, or biotechnology, anatomical structure and position, histology, organ complexities and inter-connections of organ systems within the organism.
2. In-class group worksheets and activities to enhance understanding of presented topics, such as the cell cycle, anatomical landmarks, directional reference terminology, body cavities, bony arrangement, skeletal muscular naming and actions, as well as positional and functional arrangement of organs within each organ system.
3. Animations, video clips, DVDs, slides and models to demonstrate biological processes and structures such as cellular organelles, cell reproduction, histology, as well as the integumentary, skeletal, muscular, digestive, respiratory, nervous, cardiovascular, endocrine, lymphatic, urinary and reproductive systems.

## Representative Course Assignments

### Writing Assignments

1. Students are required to complete sets of study guides outlining the functional and organizational characteristics of the human organ systems. Study guides frequently direct students to compose written descriptions of complex aspects of the organ system and to discuss the relationships between cell types, tissues, organs, and organ systems. Descriptions may include drawings, diagrams, and tables relating structural details and functionality.

### Critical Thinking Assignments

Periodical and internet research paper on evolutionary concepts comparing and contrasting theoretical influences in biological organismal and human development. Individual research and peer group review to evaluate, distinguish and differentiate veracity of ideas for presentation.

### Reading Assignments

1. Appropriate chapters from the course text are assigned as the outside reading responsibility of the student. This reading demands intensive study of anatomical illustrations, photomicrographs and labeled figures describing the functional and organizational characteristics of the human organ systems. The ability to identify the meaning of Latin and Greek roots and work patterns is an essential skill demanded of students learning the correct anatomical vocabulary. Pathologies, comparative anatomy and embryonic development of the human organ systems are also discussed to better enhance comprehension of normal anatomy. Study guide gives complete lists of all terms and points of reference for examinations in a system-by-system format.
2. Current medical and forensic events and investigations as presented in the popular media, newspapers, and scientific journals are also frequently assigned as course reading for group discussions in class.

### Skills Demonstrations

Identification of cells, tissues, arrangement and order of organs, their structure and function in detail for preparation of advanced learning for health care certificates and fields.

### Other assignments (if applicable)

1. Short videos to enhance student awareness of current medical procedures are presented.
2. Field trips to hospital operating theaters or visit to the county coroner's office and the morgue to observe an autopsy is frequently made available.
3. A CD-ROM titled "Study Partner for Anatomy" accompanies the Martini text for this course. Students are directed to utilize this supplemental study aid. Chapter examinations and quizzes are available on the CD-ROM which also links via the internet to a support site with a broad database.
4. Students are made aware of the myriad of available anatomy programs available for their study via a broad range of internet sites.

## Outside Assignments

### Representative Outside Assignments

1. Critical reading of lecture and lab book
2. Library assignments for preparations of term papers including internet research, evaluation of periodicals,
3. Group peer discussions and reviews
4. Memorization of structures listed in unit outlines in preparation for exams.
5. Students are required to complete sets of study guides outlining the functional and organizational characteristics of the human organ systems. Study guides frequently direct students to compose written descriptions of complex aspects of the organ system and to discuss the relationships between cell types, tissues, organs, and organ systems. Descriptions may include drawings, diagrams, and tables relating structural details and functionality.



**Articulation****C-ID Descriptor Number**

BIOL 110B

**Status**

Approved

**Comparable Courses within the VCCCD**

ANAT M01 - Human Anatomy

**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****Course is CSU transferable**

Yes

**CSU GE-Breadth****Area A: English Language Communication and Critical Thinking****Area B: Scientific Inquiry and Quantitative Reasoning****B2 Life Science**

Approved

**B3 Laboratory Activity**

Approved

**Area C: Arts and Humanities**

**Area D: Social Sciences**

**Area E: Lifelong Learning and Self-Development**

**Area F: Ethnic Studies**

**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 5C: Laboratory Science**

Approved

**Area 6: Languages Other than English (LOTE)**

**Textbooks and Lab Manuals**

**Resource Type**

Textbook

**Description**

Martini, F.H., Tallitsch, R.B., Nath, J.L. (2017). *Human Anatomy* (9th). Pearson, New York.

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**Resource Type**

Other Instructional Materials

**Description**

Videos – such as “Human Embryology”.

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**Resource Type**

Other Instructional Materials

**Description**

Reference atlases.

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**Resource Type**

Other Instructional Materials

**Description**

Power point presentations, overhead projection illustrations, photo and micrographic slides.

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**Resource Type**

Other Instructional Materials

**Description**

Preserved cats and other livestock organs.

**Resource Type**

Other Instructional Materials

**Description**

Specimens – such as real fetal skeleton or cancerous lung.

**Resource Type**

Other Instructional Materials

**Description**

Models- such as the heart, the musculature or the digestive system.

**Resource Type**

Other Instructional Materials

**Description**

Illustrated pictorial charts.

**Library Resources****Assignments requiring library resources**

Models of human anatomical parts with reference guides

**Sufficient Library Resources exist**

Yes

**Example of Assignments Requiring Library Resources**

Skin and burn models, Skeletal structures, Muscle models of head and neck, torso, arms, and legs, heart models, lung models, digestive system models, urinary system and kidney models, brain, eye and ear models, and male and female reproductive system models. Periodicals to biological science information.

**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)	Frequent discussions will be used such as faculty to student interaction via discussion boards as well as student to student peer interaction via discussion boards.
E-mail	Email will be available for student to instructor communications.

### Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Frequent discussions will be used such as faculty to student interaction via discussion boards as well as student to student peer interaction via discussion boards.
Other DE (e.g., recorded lectures)	Laboratory activities online through video demonstrations, 3D tutorials as well as instructor led and self-guided virtual dissections will be posted within the LMS.
E-mail	Email will be available for student to instructor communications.
Synchronous Dialog (e.g., online chat)	The instructor will hold weekly, scheduled office hours, either in person or via-web conferencing, for students to be able to meet and discuss course materials or individual progress.
Video Conferencing	Video tools such as ConferZoom can be used to provide live synchronous or asynchronous sessions with students. 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)	Frequent discussions will be used such as faculty to student interaction via discussion boards as well as student to student peer interaction via discussion boards.
Other DE (e.g., recorded lectures)	Laboratory activities online through video demonstrations, 3D tutorials as well as instructor led and self-guided virtual dissections will be posted within the LMS.
E-mail	Email will be available for student to instructor communications.
Synchronous Dialog (e.g., online chat)	The instructor will hold weekly, scheduled office hours, either in person or via-web conferencing, for students to be able to meet and discuss course materials or individual progress.
Video Conferencing	Video tools such as ConferZoom can be used to provide live synchronous or asynchronous sessions with students. 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**

08/31/2020

**Dean**

08/31/2020

**Technical Review**

09/09/2020

**Curriculum Committee**

09/09/2020

**DTRW-I**

MM/DD/YYYY

**Curriculum Committee**

12/09/2020

**Board**

MM/DD/YYYY

**CCCCO**

MM/DD/YYYY

**Control Number**

CCC000452574

**DOE/accreditation approval date**

MM/DD/YYYY