

STRING THEORY

SCHOOL OF DESIGN

Sci 145.C3 Human Anatomy and Physiology:

Design for the Human Form

Spring 2025

Total Hours: 45

Quarter Credits: 4.5

Faculty Name: [add name]	Office Hours: [Day(s)] [Times](or by appointment)
Email: [add email]	Class Hours: [Day(s)] [Times](or by appointment)
Phone: [add phone]	

Course Description: An essential key to understanding design for human use is founded in critical knowledge of the human body. This informs designers to achieve success in everything from designing ergonomic products to successfully engaging the senses. This course takes a visual reasoning approach to the study of the human body and the basic structure of cells, tissues, and organs. Topics include the structure and function of the integumentary, muscular, nervous, and skeletal systems, and this knowledge is built systematically through modeling and visual representation. This course contains a required weekly lab.

Prerequisites: None

IDEATE Program Educational Objectives Alignment: This course is designed to help students achieve the following IDEATE Program Educational Objectives:

- Think critically and creatively
- Apply technique to create quality
- Apply knowledge to design challenges

Completion of this course will yield the following student learning outcomes:

- Construct core knowledge
- Dive deep in design
- Innovate solutions

Course Learning Goals: The course is designed around the following learning goals. Upon completion of this course, students should be able to:

- Construct comprehensive knowledge about how the human body functions
- Think creatively to design a solution that meet an authentic human need related to anatomy and physiology
- Apply knowledge of anatomy and physiology in the design to support healthy body function

IDeATE Competencies and Mastery Credits:

Competencies	Course Specific Mastery Credits
Inquiry	Patterns: Organizing information (including numerical and visual) to identify patterns and/or relationships to answer a question or solve a problem
Design	Prototyping: Implement an idea in a tangible form.
Critical Thinking	Interpreting Data: Interpret data or information from sources and draw justifiable conclusions.
Core Knowledge	Core STEM and Design
Collaboration	Critique: Analyze the works and reasoning of peers and apply criteria to evaluate it.
Communication	Precision: Expressing ideas and information with exactness, specificity, correct use of terminology, and refinement
Engagement	Work Ethic: committing to doing what you are tasked to do with integrity, quality, thoroughness, and attention to when others need it.

Course Materials:

Required Texts and Materials:

1. Tortora, G and B Derrickson (2010) Introduction to Human Anatomy and Physiology - Tenth Edition John Wiley Publishing ISBN 978-1-118-58318-0
2. Apple Essential Anatomy 5 app
3. https://www.ted.com/talks/janine_benyus_biomimicry_in_action?language=en
4. Video resources on visual rendering of anatomical structures

Mastery Grading System:

3.8 - 4.0 Exceeds Mastery	3.0 - 3.7 Mastery	2.0 - 2.9 Developing	1.0 - 1.9 Insufficient Evidence
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Whole number mastery grades (1 - 4) are recorded for each mastery credit (evidenced by products, performances, or assessments) with points used to compute a synthesized mastery course grade for each student at the end of each quarter. Students must earn a mastery course grade of 3.0 to evidence mastery of course learning goals. Students with a 2.0 or higher receive credit for a course and evidence readiness for any future learning for which this course serves as a prerequisite in the IDeATE program.

Course Schedule (subject to change, with notice):

Week #	Topics/Experiences	Content	Products/Performances/ Assessments
Week 1	EQ: How can deep knowledge of human anatomy and physiology inform better living through design? Organization of the Human Body, Cells	Intro to HA&P Chapters 1 and 3	Content Quiz 1 Socratic Seminar 1: Essential Question Design Project: Choose an authentic human need related to anatomy, physiology, and access for disabled persons Drawing digital journal entry 1
Week 2	Integumentary and Muscular Systems	Intro to HA&P Chapters 5 and 8	Content Quiz 2 Design Project: Background Research on authentic human need Drawing digital journal entry 2
Week 3	Nervous Tissue and Nervous Systems	Intro to HA&P Chapters 9, 10, and 11	Content Quiz 3 Design Project: Deep Dive(s) into systems impacted by that need Drawing digital journal entry 3
Week 4	Somatic Senses, Special Senses, and Endocrine System	Intro to HA&P Chapters 12 and 13 Sensory Lab	Content Quiz 4 Design Project: Empathize and Sensory Lab Drawing digital journal entry 4
Week 5	Cardiovascular System	Intro to HA&P Chapters 14 and 15 Cardiovascular Lab	Content Quiz 5 Design Project: Ideate and Cardiovascular Lab Drawing digital journal entry 5
Week 6	Lymphatic System and Respiratory System	Intro to HA&P Chapters 16, 17, and 18	Content Quiz 6 Design Project: Initial prototype and draft design card content. Drawing digital journal entry 6
Week 7	Digestive System How to engage in effective critique	Intro to HA&P Chapter 19	Content Quiz 7 Design Project: Critique round one and upleveling. Drawing digital journal entry 7
Week 8	Urinary System and Reproductive System	Intro to HA&P Chapters 21 and 23	Content Quiz 8 Design Project: Prototype 2 Drawing digital journal entry 8
Week 9	Synthesis of Function and Design	All texts and media	Content Quiz 9 Design Project: Critique round two and upleveling, finalize design card content.

Week #	Topics/Experiences	Content	Products/Performances/ Assessments
Week 10	EQ: How can deep knowledge of human anatomy and physiology inform better living through design? Product Prototype Gallery	Product prototypes	Socratic Seminar 3: Essential Question Product Prototype Gallery Walk Narrative Self-Reflection

Submission Dates:

SUBMISSION DATE	PRODUCT/PERFORMANCE/ASSESSMENT DUE
weekly on Fridays (Weeks 1-8)	Weekly content quizzes
weekly on Fridays (Weeks 1-8)	Weekly anatomical drawing digital journal entries
TBD Week 1	EQ Socratic Seminar 1
TBD Week 1	Design Project Proposal
TBD Week 2	Design Project Background Research
TBD Week 3	Design Project Deep Dive Analysis
TBD Week 4	Sensory Lab
TBD Week 5	Cardiovascular Lab
TBD Week 6	Design Prototype 1
TBD Week 7	Written Peer Critique 1
TBD Week 8	Design Prototype 2
TBD Week 9	Product Design Card
TBD Week 9	Written Peer Critique 2
TBD Week 10	EQ Socratic Seminar 2
TBD Week 10	Narrative Reflection
TBD Week 10	Final Design Prototype

IDeATE PROGRAM POLICIES:

Academic Integrity: IDeATE students and professors uphold academic integrity as one of our highest priorities, and the String Theory School of Design investigates any allegation of violations of academic integrity. Violations include, but are not limited to: plagiarism, cheating, fabrication, and other forms of academic misconduct. Students who believe they have been wrongly accused or sanctioned have a right to an appeals process.

Attendance Requirements:

Students are expected to attend all classes, and must notify professors if they are not able to attend class for any reason. It is the student's responsibility to inquire about experiences, content, and work missed due to that absence. For further information on the attendance policy, please consult the IDeATE Program catalog.

Course Change Policy: IDeATE program faculty reserve the right to make changes to the course during the quarter to best actualize course learning goals. Changes will be announced to individual classes and conveyed in writing in advance of the change.

Accessibility and Disability Accommodations: Students with disabilities requesting accommodations and services need to complete an Accessibility Form, along with documentation from a licensed medical professional with a diagnosis of disability (defined as an impairment and/or condition that substantially limits a major life activity for 6+ months). Temporary adjustments are available for individuals with

short-term impairments, i.e., those due to accident or injury. Please see the String Theory School of Design IDeATE Program course catalog for more details.

Course Drops and Withdrawals: Enrolled students may drop a course through the end of Week 1, and may withdraw from a course through Week 7. Please be aware of the potential financial and academic implications of course drops and withdrawals. Please see the String Theory School of Design course catalog for more details. Once registered, it is your obligation to attend, drop, or withdraw. Dropping will remove the course from your transcript. Withdrawing will result in a “W” on a student’s transcript.

Commitment to Inclusive Practices: The String Theory School of Design welcomes individuals from diverse backgrounds and perspectives, and promotes an inclusive and respectful environment that enriches the school community and the educational and employment experience of its members. To report an incident, sexual misconduct, discrimination or harassment based on race, color, national origin, religion, sex, sexual orientation, disability, gender identity or expression, age, veteran status, or any other protected category or identity, please follow current guidance in the String Theory School of Design IDeATE Program course catalog.

Professor’s Welcome:

[add a note of welcome that creates a sense of belonging]

Course Specific Expectations:

[add a narrative paragraph or bulleted expectations no more than a half page in length]