



College of Health
and Human Services

Department/ Academic Unit: Department of Communication Sciences & Disorders, College of Health and Human Services

Course prefix, Section number and Title: CSD 251 - Anatomy and Physiology of Speech and Language

Term/ Year: Fall 2019 (M/W, 11:30 – 12:20 pm)

Office Hours: M/W, 12:30 pm – 1:30 pm, or by appointment. Please contact me using a message on Bblearn.

Total Units of Course Credit: 3 credits

Course Pre-requisite(s): None

Mode of Instruction: Blended Learning (Face to face teaching on M/W in Health Professions, room 101, and online learning on Fridays through Bblearn)

Instructor's Name: Rebecca S. Bartlett, Ph.D., CCC-SLP

Instructor's Contact Information: Email (Rebecca.Bartlett@nau.edu); Office phone (928-523-3561)

Course Purpose:

This course is a requirement for students pursuing a Bachelor of Science degree in Communication Sciences and Disorders (CSD). It is also a requirement for students earning a Speech-Language Pathology Assistant (SLPA) certificate. Additionally, this is a leveling course offered to students pursuing graduate coursework in CSD after completing a degree in another field. Completion of CSD 251 is a prerequisite for higher level courses within the CSD department.

CSD 251 will introduce students to anatomy and physiology (structure and function) relevant to human communication and swallowing. The emphasis will be on respiration, phonation, articulation, and resonance. An overview of the neuroanatomical and neurophysiological foundations of communication will also be provided. The course will focus on the typical child and adult, which will facilitate comprehension of atypical conditions covered in later coursework.

In this course, in-person and recorded lectures will accompany assigned readings and activities. Additionally, students will be provided with a hands-on learning experience by creating three-dimensional models of relevant anatomical structures.

Course Student Learning Outcomes:

In this course, the student will:

- 1) Identify anatomical structures associated with the respiratory, phonatory, resonatory, and articulatory subsystems of speech.
- 2) Describe the physiology of speech production (i.e., respiration, phonation, resonance, articulation) and swallowing.

- 3) Demonstrate basic comprehension of the neurological systems underlying speech production and swallowing.
- 4) Demonstrate knowledge of normal development and maturation of speech subsystems across the lifespan.
- 5) Synthesize knowledge about the speech mechanism to apply toward the comprehension of communication disorders.

Note: CSD 376 (Hearing Science) and CSD 405 (Neurological Foundations of Speech, Language, and Hearing) present detailed content about the anatomy and physiology of the human auditory and nervous systems.

Assignments/Assessments of Course Student Learning Objectives:

Overview of Class Organization

This course uses a blended instructional style. On Mondays and Wednesdays, you are expected to attend class for face-to-face instruction. On Fridays, there are online lectures and activities that you will view/complete at home. The online lectures and activities will be posted on BbLearn, and they will be organized by that week's topic. All lectures, activities, and required readings from the textbook that are listed in the Class Schedule. The Class Schedule also includes dates for all assignments, quizzes and exams. Your grade in this class will be based on two modeling projects, six quizzes, four exams, and class participation. See below for further description.

Modeling Projects

There will be two anatomical models (Larynx = 70 points; Circle of Willis = 30 points) that you will construct. The larynx will be built from cardstock and metal fasteners, and the Circle of Willis will be constructed from pipe cleaners. To demonstrate your knowledge, you will create a short video (2 minutes or shorter) in which you label specific anatomical landmarks and answer specific questions about your models. Further description of each project is available on BbLearn.

Quizzes

There will be six quizzes throughout the semester that will be provided on BbLearn that you will complete at home. You will have two attempts for each quiz, and 25 minutes per attempt. Your highest score will be recorded. Quizzes will become available on the last day of lecture about a quiz topic. You will typically need to complete each quiz by the following Sunday night (see Class Schedule). Students are expected to work independently on all quizzes and to not use their book, the internet, or any other resource.

Examinations

There will be three exams throughout the semester (50 minutes/each) and a non-cumulative final examination (2 hours). All exams will be provided in class, and there will be no access to books, notes, or other resources. Each student will be responsible to bring a laptop to class to take Examinations #1-3 and the Final Examination. The examinations will be provided on BbLearn during the class periods noted on the schedule below. Please plan accordingly. If you do not have a laptop, consider borrowing one from Cline Library for test days (a free service). Students will work independently on examinations. Each student will have one attempt for each test.

There are Study Questions provided at the end of each chapter in the required textbook that will help you prepare for quizzes and exams. The instructor reserves the right to change the number, scheduled day, and point value of assignments, quizzes, and examinations based on class needs. Students will be notified in advance of any changes to the above assignments or schedule.

Class Participation

Students will earn participation points by bringing their “ticket to class”, by meaningfully contributing to class discussions, by staying “on task” during class activities, by using professional oral/written communication with the instructor and fellow classmates, and through regular class attendance. The “ticket to class” requires the student to write a multiple-choice quiz question that is relevant to the previous day’s lecture/reading and to bring it to class. There will be a table at the front of the room where you can place your question/answers. The ticket to class is not required on class days following tests.

Extra Credit

You will receive 4 points of extra credit if you fill out the instructor evaluation at the end of the semester. There may be additional extra credit opportunities during the semester.

Grading System:

	Points	Notes
Modeling Projects	100	Larynx = 70 points Circle of Willis = 30 points
Quizzes	60	6 quizzes (10 points/quiz), BbLearn
Test #1	100	BbLearn
Test # 2	100	BbLearn
Test #3	100	BbLearn
Test #4 (Final)	100	BbLearn
Class Participation	30	See above for description
Total:	590	

Grades will be assigned as follows:

- 90 – 100% = A
- 80 – 89.99% = B
- 70 – 79.99% = C
- 60 – 69.99% = D
- Below 60.99% = F

Readings and Materials:

Required textbook: Seikel JA, Drumright DG, and King DW. (2016) *Anatomy & physiology for speech, language, and hearing, 5th edition*. Clifton Park, New York:

Cengage Learning. The textbook required for this course is included in Cengage Unlimited, a subscription that gives you access to all your Cengage access codes and online textbooks for \$119.99 per term, \$179.99 per year or \$239.99 for two years. No matter how many Cengage products you use, they are included in Cengage Unlimited, and the price stays the same. You can purchase access to Cengage Unlimited in the bookstore, or at cengage.com.

Additional required materials: You will be asked to create anatomical models of a larynx and the blood supply of the brain (the Circle of Willis). You will need thick paper or cardstock for the larynx model and metal fasteners (i.e., “brads”). You will need some pipe cleaners and sticky notes for the blood supply model. You will also need a way (e.g., a cell phone) to make a short video to demonstrate anatomical landmarks on your model. The videos will be submitted electronically to the instructor. Please plan accordingly.

Class Schedule:

Note: italicized dates denote online instruction/activities

Week	Date	Reading Prior to Class	In-Class Lectures (MW)	Online Lectures & Activities (F)	Due dates
1	Aug 26	-	First Day of Class lecture	<i>Activity</i> <ul style="list-style-type: none"> • Read the syllabus and copy quiz/test/assignment dates into your planner 	
	Aug 28	pp. 1 – 11 pp. 25 (“Muscles”) to 28 pp. 29 - 33	Basic Elements of Anatomy <ul style="list-style-type: none"> • How do CSD professionals use A & P? • Planes of Reference and Other Basic Terms • Muscles and Their Innervation 		
	<i>Aug 30</i>	<i>pp. 11 (“Organs”) to 20 (“Joints”).</i>		<i>Online lectures: Basic Elements of Anatomy</i> <ul style="list-style-type: none"> • Cavities & Tissues • Bones & Joints • Four Subsystems of Speech <i>Activities:</i> <ul style="list-style-type: none"> • Draw head/neck diagram 	Quiz #1 (Basic Elements of Anatomy): Available Aug 30 – Sept 1

				<ul style="list-style-type: none"> • Study Questions (Seikel, p. 42) 	
2	Sept 2		No class- Labor Day		
	Sept 4	pp. 49 – 74	Anatomy of Respiration <ul style="list-style-type: none"> • Why do we care about speech breathing? • Pressure, Volume, and Boyle’s Law • Skeletal Structures of the Respiratory System • Ribs and How they Move During Respiration 		
	Sept 6	pp. 74 - 88		<i>Online lectures:</i> <i>Anatomy of Respiration</i> <ul style="list-style-type: none"> • <i>Soft tissues of the Respiratory System/Thorax</i> • <i>Gas Exchange During Breathing</i> <i>Activity:</i> <ul style="list-style-type: none"> • <i>Gas Exchange during Breathing animation</i> 	
3	Sept 9	pp.88 – 110	Anatomy of Respiration <ul style="list-style-type: none"> • Lung Concepts • Inspiratory Concepts and Relevant Musculature • Inspiratory Muscles of the Thorax 	<i>Activity:</i> <ul style="list-style-type: none"> • <i>Draw muscles from lecture in packet (and continue to do this throughout the unit)</i> 	
	Sept 11	pp.110 - 126	Anatomy of Respiration <ul style="list-style-type: none"> • Inspiratory Muscles of the Neck and Back • Trunk Stabilizers of the Shoulder and Back • Expiratory Concepts and Relevant Musculature • Expiratory Muscles of the Thorax/Back 		
	Sept 13	pp. 126 - 132		<i>Online lecture:</i> <i>Anatomy of Respiration</i>	Quiz #2 (Anatomy of Respiration):

				<ul style="list-style-type: none"> • Expiratory Muscles of the Abdomen <p><i>Activities:</i></p> <ul style="list-style-type: none"> • <i>How Do We Breathe animation</i> • <i>Science- Respiratory System animation</i> • <i>Muscle Table</i> 	<i>Available Sept 13 - 15</i>
4	Sept 16	pp. 143 – 156	Physiology of Respiration <ul style="list-style-type: none"> • Forces of the Breathing Apparatus • Lung Volumes & Capacities 	<p><i>Online lecture: Physiology of Respiration</i></p> <ul style="list-style-type: none"> • <i>Breathing During Speech</i> <p><i>Activity:</i></p> <ul style="list-style-type: none"> • <i>Volumes/Capacities worksheet</i> • <i>TLC and RV Predictions</i> 	
	Sept 18	pp. 158 - 165	Physiology of Respiration <ul style="list-style-type: none"> • Five Types of Air Pressure during Speech/Non-Speech Functions • Deconstructing the Relationships between Pressures, Flows, and Volumes 		
	Sept 20	pp. 156-157 pp. 165 - 168		<p><i>Online lectures: Physiology of Respiration</i></p> <ul style="list-style-type: none"> • <i>Basics of Respiratory Measurement and Development</i> • <i>Factors that Affect Respiration</i> • <i>What is relaxation pressure?</i> • <i>How do we measure relaxation pressure?</i> 	
5	Sept 23	pp. 168 - 177	Physiology of Respiration:		

			<ul style="list-style-type: none"> • How does body position affect speech breathing? • Air Pressures and Respiratory Cycles during Speech 		
	Sept 25		Test #1 (Basics Elements of Anatomy, Anatomy/Physiology of Respiration)		
	Sept 27			<p><i>Activities:</i></p> <ul style="list-style-type: none"> • Draw the head/neck diagram again as a review for the next unit • Voiced vs voiceless worksheet <p><i>Online lecture:</i> Anatomy of Phonation</p> <ul style="list-style-type: none"> • What is the larynx, and why does voice matter? 	
6	Sept 30	pp. 183 – 206	Anatomy of Phonation <ul style="list-style-type: none"> • Laryngeal Cartilages • Vocal Folds 	<p><i>Online lecture:</i> Anatomy of Phonation</p> <ul style="list-style-type: none"> • Laryngeal Membranes and Spaces 	
	Oct 2	pp. 209 - 222	Anatomy of Phonation <ul style="list-style-type: none"> • Intrinsic Laryngeal Muscles 		
	Oct 4	pp. 206 – 209 pp. 222 - 237		<p><i>Online lecture:</i> Anatomy of Phonation</p> <ul style="list-style-type: none"> • Laryngeal Joints • Reviewing the larynx in different planes • Extrinsic Laryngeal Muscles <p><i>Activity:</i></p> <ul style="list-style-type: none"> • Laryngeal labeling packet 	<p>Quiz #3 (Anatomy of Phonation): Available Oct 4 - 6</p>

7	Oct 7		No class, to allow time to work on your larynx model		
	Oct 9	pp. 249 - 262	Physiology of Phonation <ul style="list-style-type: none"> • Vocal Fold Vibration and the Sound Waveform • Physiology of Vocal Fold Vibration 		
	Oct 11	pp. 245 – 249 pp. 288 - 289		Online lectures: <i>Physiology of Phonation</i> <ul style="list-style-type: none"> • <i>Non-Speech Functions of the Larynx</i> • <i>Brief Introduction to Vocal Fold Vibration Theories</i> 	
8	Oct 14	pp. 262 - 288	Physiology of Phonation <ul style="list-style-type: none"> • Vocal Registers • Controlling Pitch and Intensity • Linguistic Aspects of Pitch and Loudness 		
	Oct 16	pp. 277 - 291	Physiology of Phonation <ul style="list-style-type: none"> • Laryngeal Development • Brief Introduction to Voice Evaluation/ Measurement 		Larynx Model due Oct 16
	Oct 18			Activity: <ul style="list-style-type: none"> • <i>Laryngeal function worksheets</i> 	
9	Oct 21		Test #2 (Anatomy/Physiology of Phonation)		
	Oct 23	pp. 299 - 316	A/P of Articulation and Resonance <ul style="list-style-type: none"> • What is speech articulation and why does it matter? • Source-Filter Theory of Vowel Production 		
	Oct 25	pp. 332 - 341 pp. 355 - 361		Online lecture: <i>A/P of Articulation and Resonance</i> <ul style="list-style-type: none"> • <i>Cavities of the Vocal Tract</i> 	

				<ul style="list-style-type: none"> • <i>Bones of the Cranium</i> 	
10	Oct 28	pp. 316 – 332 pp.361 - 370 pp. 413 - 415	A/P of Articulation and Resonance <ul style="list-style-type: none"> • Facial Bones Relevant to Speech and Swallowing • Lips and Cheeks: Anatomy and Speech Physiology 		
	Oct 30	pp. 370 – 391 pp. 416 – 420 pp. 420-421	A/P of Articulation and Resonance <ul style="list-style-type: none"> • Tongue: Anatomy and Speech Physiology • Velopharyngeal A/P for Speech and Swallowing 		
	Nov 1	pp. 341 - 355 pp. 421 - 431		<i>Online lectures:</i> <i>A/P of Articulation and Resonance</i> <ul style="list-style-type: none"> • <i>Dentition 101 for the CSD Professional</i> • <i>Articulatory/Vocal Tract Development</i> <i>Activity:</i> <ul style="list-style-type: none"> • <i>How does your velum work? (Worksheet)</i> 	
11	Nov 4	pp. 380 – 386/pp. 415 -416 pp. 391 – 396 pp. 411-413	A/P of Articulation and Resonance <ul style="list-style-type: none"> • Mandible: A/P for Speech and Swallowing • Pharyngeal Constrictors • How do we measure articulatory movements, and why would we want to? 		
	Nov 6		Test #3 (Anatomy/Physiology of Articulation and Resonance)		
	Nov 8			<i>Online lecture:</i> <i>Neuroanatomy</i> <ul style="list-style-type: none"> • <i>Why do professionals in CSD</i> 	

				<i>care about neuroanatomy/neuro physiology?</i>	
12	Nov 11		No class – Veteran’s Day		
	Nov 13	pp. 577 – 597	Neuroanatomy <ul style="list-style-type: none"> • Divisions of the Nervous System • Cells and Neurotransmitters 		
	Nov 15	pp. 597 - 606		Online lecture: Neuroanatomy <ul style="list-style-type: none"> • Ventricles and Cerebrospinal Fluid 	
13	Nov 18	pp. 606 – 620 pp.640 - 675	Neuroanatomy <ul style="list-style-type: none"> • Cerebral Cortex • Brainstem • Cranial Nerves 		
	Nov 20	pp. 675 - 693	Neuroanatomy <ul style="list-style-type: none"> • Spinal Cord and Spinal Nerves • Upper and Lower Motor Neurons 	Activity: <ul style="list-style-type: none"> • Motor Neurons video • “Ask the Doc” Q and A 	
	Nov 22	pp. 624 - 640		Online lectures: Neuroanatomy <ul style="list-style-type: none"> • Subcortical Structures and the Cerebellum • Blood Supply to the Brain 	Quiz #4 (Neuroanatomy) available Nov 22 - 24
14	Nov 25	pp. 705 - 722	Neurophysiology <ul style="list-style-type: none"> • How Action Potentials Work • Neuromuscular Junctions 		Circle of Willis model due Nov 25
	Nov 27	pp. 729 - 755	Online lectures: Neurophysiology <ul style="list-style-type: none"> • Neurological Instrumentation • Brodmann Areas • Hemispheric Specialization • Common Causes of Damage to the Nervous System 		Quiz #5 (Neurophysiology) available Nov 27 – Dec 1

	Nov 29		No class – Thanksgiving holiday		
15	Dec 2	pp. 447 – 448 pp. 452 - 466	Physiology of Swallowing <ul style="list-style-type: none"> • What is swallowing impairment and why does it matter? • Swallowing Terms and Stages • Mapping CNs and Muscles to Swallowing Stages 	<i>Activity:</i> <ul style="list-style-type: none"> • Watch “Swallow: A Documentary” 	
	Dec 4	pp. 449 – 452 pp.466 - 481 pp. 481 - 488	Physiology of Swallowing <ul style="list-style-type: none"> • Swallowing Development • Sensorimotor Control of Swallowing • Taste, Smell, and Tactile Sense of Swallowing 		Quiz #6 (Physiology of Mastication and Deglutition) available Dec 4 - 8
	<i>Dec 6</i>			<i>Review for Test #4</i>	
16	Dec 11, 10 am - noon		Test #4 (Final) (Neuroanatomy, Neurophysiology, Physiology of Mastication and Deglutition)		

Class Policies:

TIPS FOR BEING SUCCESSFUL IN THIS CLASS

There is a lot of material to cover when learning anatomy and physiology, so please strategize how to be successful in this course. Schedule consistent times to read the assigned chapters, to practice the study questions at the end of each chapter, and to do the course activities. The more that you review course material, the better you will learn it. This could involve re-writing course notes, re-reading chapters, reading chapters out loud, drawing and labeling diagrams, coloring anatomical diagrams (a good one is: Kapit & Elson (2014) *The anatomy coloring book, 4th edition*), or imagining how a muscle moves from its point of insertion toward it’s point of origin. Anatomy and physiology are foundational to communication sciences and disorders, so investing your time and energy in these topics will support your professional training and practice.

COMMUNICATING WITH THE INSTRUCTOR

This course is delivered via BlackBoard (BbLearn). Bblearn has a messaging system that allows students to communicate with the instructor. All communication pertaining to this course should be sent via Bblearn rather than through email. This will enable the instructor to keep track of course-specific communication and more readily address your questions and comments. Please allow the instructor at least 24 hours to respond during weekdays. Communication sent on Friday afternoon or weekends will be responded to the following Monday, at the latest.

BBLEARN

This course is provided through Bblearn. Sometimes Bblearn does not have full functionality in certain web browsers. In order to prevent Bblearn technical issues, please use the Google Chrome web browser when accessing Bblearn. If you encounter difficulty, please call the Student Technology Center (928-523-9294) or email them (ask-stc@nau.edu).

ATTENDANCE & PARTICIPATION

It is expected that you actively participate in this course via frequent review of course material and by asking questions when needed. Active participation in class will likely improve your performance on assignments, quizzes, and exams.

Please actively participate in this course by:

- Review the course syllabus, assignment guidelines, and due dates.
- Check BbLearn at least four times weekly for important course announcements, messages, calendar items, discussions, assignments, and course content (lectures for streaming, slides).
- Communicate with the instructor and other members of the class via discussion boards or messaging. Respectful and professional dialogue should be used throughout the course. For example, use complete sentences in all written communication and proofread messages (e-mails and discussion posts) for spelling and grammatical errors.
- Ask the instructor clarifying questions (regarding course expectations, content) when needed.
- Submit original work. Plagiarism and academic dishonesty will not be tolerated. Students who commit academic dishonesty will not receive credit for the class, and could result in University disciplinary action, including suspension/expulsion.

ACADEMIC INTEGRITY

You are expected to be familiar with and abide by the Northern Arizona University Academic Integrity policy. Students are expected to work independently on all online quizzes and examinations. Cheating on any quiz or examination will result in zero points being awarded for that exam. Discussion with fellow students when completing the modeling projects is encouraged.

LATE ASSIGNMENTS/TESTS

It is a requirement to complete assignments/quizzes before or on the assigned due date. Late submissions of the anatomical model assignment videos will result in a loss of ten points for each weekday that they are late. Plan for computer difficulties. If you have an unreliable computer, make other arrangements (e.g., school library, public library, etc.).

MISSED EXAMINATIONS

Missing a test or a quiz will result in a zero for that test/quiz. Late/alternate day exams **will not** be given, except in the case of extenuating circumstances. You will need to provide proof of the extenuating circumstance. Travel plans do not constitute extenuating circumstances.

Tests will be based on material covered in class and in the textbook and will not be cumulative. However, this course is, by nature, cumulative. Failure to understand one

subsection of the class will likely result in failure to understand multiple subsections of the class.

GRADING

Throughout the semester, the student will be responsible for monitoring the agreement between assignment/examination grades, with grades reported online. Please contact the instructor to report any discrepancies.

DISPUTE OF GRADE

In the event that a student wishes to address the grading of a specific quiz or examination question, please submit a written appeal to the instructor within one week of the examination being returned. The written appeal should include strong evidence supporting the claim (e.g., textbook pages, lecture slides).

Departmental Policies:

CLINICAL EXPERIENCE

Undergraduate students may need clinical experience to either prepare for admission to a graduate program (25 hours of observation) or to become eligible for an SLPA license (100 hours of clinical interaction with clients). These are two separate requirements with each serving a different purpose. The 25 hours of observation required for graduate school do not count toward the 100 hours of clinical interaction required for an SLPA license in Arizona. Some states require both observation and supervised clinical interaction for SLPA applicants. Contact your state licensing body to verify requirements in your state. The prerequisites for clinical experience vary by clinical site. However, the standard expectation for undergraduate students in the NAU CSD department is that they will have the following in place before they participate in any clinical activities: IVP fingerprint clearance card (for students in Arizona); immunization records; proof of HIPAA training (<https://in.nau.edu/its/hipaa/>); and student liability insurance. **For students seeking 100 hours of clinical interaction to obtain an SLPA license, contact Dr. Jeff Meeks at Jeffrey.meeks@nau.edu at least a full semester before the date you plan to begin your practicum for specific instructions.**

University Policies:

ACADEMIC INTEGRITY

NAU expects every student to firmly adhere to a strong ethical code of academic integrity in all their scholarly pursuits. The primary attributes of academic integrity are honesty, trustworthiness, fairness, and responsibility. As a student, you are expected to submit original work while giving proper credit to other people's ideas or contributions. Acting with academic integrity means completing your assignments independently while truthfully acknowledging all sources of information, or collaboration with others when appropriate. When you submit your work, you are implicitly declaring that the work is your own. Academic integrity is expected not only during formal coursework, but in all your relationships or interactions that are connected to the educational enterprise. All forms of academic deceit such as plagiarism, cheating, collusion, falsification or fabrication of results or records, permitting your work to be submitted by another, or inappropriately recycling your own work from one class to another, constitute academic misconduct that may result in serious disciplinary consequences. All students and faculty members are responsible for reporting suspected instances of academic misconduct. All students are

encouraged to complete NAU's online academic integrity workshop available in the E-Learning Center and should review the full academic integrity policy available at <https://policy.nau.edu/policy/policy.aspx?num=100601>.

COURSE TIME COMMITMENT

Pursuant to Arizona Board of Regents guidance (Academic Credit Policy 2-224), for every unit of credit, a student should expect, on average, to do a minimum of three hours of work per week, including but not limited to class time, preparation, homework, and studying.

DISRUPTIVE BEHAVIOR

Membership in NAU's academic community entails a special obligation to maintain class environments that are conducive to learning, whether instruction is taking place in the classroom, a laboratory or clinical setting, during course-related fieldwork, or online. Students have the obligation to engage in the educational process in a manner that does not breach the peace, interfere with normal class activities, or violate the rights of others. Instructors have the authority and responsibility to address disruptive behavior that interferes with student learning, which can include the involuntary withdrawal of a student from a course with a grade of "W". For additional information, see NAU's disruptive behavior policy at <https://nau.edu/university-policy-library/disruptive-behavior>.

NONDISCRIMINATION AND ANTI-HARASSMENT

NAU prohibits discrimination and harassment based on sex, gender, gender identity, race, color, age, national origin, religion, sexual orientation, disability, or veteran status. Due to potentially unethical consequences, certain consensual amorous or sexual relationships between faculty and students are also prohibited. The Equity and Access Office (EAO) responds to complaints regarding discrimination and harassment that fall under NAU's Safe Working and Learning Environment (SWALE) policy. EAO also assists with religious accommodations. For additional information about SWALE or to file a complaint, contact EAO located in Old Main (building 10), Room 113, PO Box 4083, Flagstaff, AZ 86011, or by phone at 928-523-3312 (TTY: 928-523-1006), fax at 928-523-9977, email at equityandaccess@nau.edu, or via the EAO website at <https://nau.edu/equity-and-access>.

TITLE IX

Title IX is the primary federal law that prohibits discrimination on the basis of sex or gender in educational programs or activities. Sex discrimination for this purpose includes sexual harassment, sexual assault or relationship violence, and stalking (including cyberstalking). Title IX requires that universities appoint a "Title IX Coordinator" to monitor the institution's compliance with this important civil rights law. NAU's Title IX Coordinator is Pamela Heinonen, Director of the Equity and Access Office located in Old Main (building 10), Room 113, PO Box 4083, Flagstaff, AZ 86011. The Title IX Coordinator is available to meet with any student to discuss any Title IX issue or concern. You may contact the Title IX Coordinator by phone at 928-523-3312 (TTY: 928-523-1006), by fax at 928-523-9977, or by email at pamela.heinonen@nau.edu. In furtherance of its Title IX obligations, NAU will promptly investigate and equitably resolve all reports of sex or gender-based discrimination, harassment, or sexual misconduct and will eliminate any hostile environment as defined by law. Additional important information about Title IX and related student resources, including how to request immediate help or confidential support following an act of sexual violence, is available at <http://nau.edu/equity-and-access/title-ix>.

ACCESSIBILITY

Professional disability specialists are available at Disability Resources to facilitate a range of academic support services and accommodations for students with disabilities. If you have a documented disability, you can request assistance by contacting Disability Resources at 928-523-8773 (voice), 928-523-6906 (TTY), 928-523-8747 (fax), or dr@nau.edu (e-mail). Once eligibility has been determined, students register with Disability Resources every semester to activate their approved accommodations. Although a student may request an accommodation at any time, it is best to initiate the application process at least four weeks before a student wishes to receive an accommodation. Students may begin the accommodation process by submitting a self-identification form online at <https://nau.edu/disability-resources/student-eligibility-process> or by contacting Disability Resources. The Director of Disability Resources, Jamie Axelrod, serves as NAU's Americans with Disabilities Act Coordinator and Section 504 Compliance Officer. He can be reached at jamie.axelrod@nau.edu.

RESPONSIBLE CONDUCT OF RESEARCH

Students who engage in research at NAU must receive appropriate Responsible Conduct of Research (RCR) training. This instruction is designed to help ensure proper awareness and application of well-established professional norms and ethical principles related to the performance of all scientific research activities. More information regarding RCR training is available at <https://nau.edu/research/compliance/research-integrity>.

SENSITIVE COURSE MATERIALS

University education aims to expand student understanding and awareness. Thus, it necessarily involves engagement with a wide range of information, ideas, and creative representations. In their college studies, students can expect to encounter and to critically appraise materials that may differ from and perhaps challenge familiar understandings, ideas, and beliefs. Students are encouraged to discuss these matters with faculty.