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Land Acknowledgement

We respectfully acknowledge the Syilx Okanagan Nation and their peoples, in whose traditional, ancestral, unceded territory UBC Okanagan is situated.

Health & Exercise Sciences 320 001 (3 credits)
Functional Anatomy
2025/26 W1

Instructor: Dr. Gregory duManoir PhD
Office: ART 138
Office phone: 250.807.9958
Office Hours: T/R 9:45-10:45 by appointment on MS Bookings
email: greg.dumanoir@ubc.ca

Class times:	**Lecture**	W	14:00 – 15:30	LIB 317	
		F	14:00 – 15:30	LIB 317	
	Lab L01	T	12:00 – 14:00	UCH 010	Bryce Twible
	Lab L02	T	14:00 – 16:00	UCH 010	Cori Calkins
	Lab L03	T	16:00 – 18:00	UCH 010	Lani Campbell
	Lab L04	T	18:00 – 20:00	UCH 010	Lani Campbell
	Lab L05	W	08:00 – 10:00	UCH 010	Cori Calkins
	Lab L06	W	10:00 – 12:00	UCH 010	Cori Calkins

Teaching Assistants:

1. Cori Calkins cori.calkins@ubc.ca
2. Lani Campbell lani03c@student.ubc.ca
3. Bryce Twible twible15@student.ubc.ca

Academic Calendar Entry

HES 320 (3) Functional Anatomy

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. [3-2-0]

***Prerequisite**:* HES 120 or all of BIOL 131, BIOL 133.

Course Format

The course combines both lecture and laboratory sessions to achieve the learning objectives. The lectures will focus on the key anatomy structures and their function as well as concepts and principles underpinning the study of human movement. Special topics on comparative anatomy, movement screening, assessment and corrections will be discussed, as well as key special topics that are 'hot topics' in the literature today.

Laboratory activities specifically address palpation, land marking and identification of specific anatomical structures through the use of bone, joint, limb and muscle models. In addition, the practical application of functional anatomy to movement will be explored.

Activities including discussions, practical experiences and evaluations will provide the optimal learning environment for students and require student participation.

Course Overview, Content, and Objectives

The course is designed to provide in-depth information on the structure of the human body. Lectures and laboratories emphasize the anatomical relationship in the extremities and the trunk as they relate to human movement, athletic therapy, and fitness. Special attention is given to the contribution of neural, vascular and musculoskeletal systems to integrative human movement.

1. To progress students understanding of human anatomy, with particular emphasis on the skeletal, muscular, vascular and nervous systems
2. To introduce students to how the structure of the human body influences function
3. Apply foundational anatomy principles necessary to explain individual joint complexes and their independent and composite functions in posture and movement

Learning Outcomes

After completing the course students should be able to do the following with respect to the major structures and systems within the body:

1. Bones
   a. Identify, in situ and as independent structures, the major bones in the human body
   b. Label on drawings and identify on bone specimens the prominent landmarks and other special features, and relate these features with other soft tissue (tendon or ligament attachments) or bone(s) (articular surfaces)

2. Articulations
   a. Categorize and classify the joints of the human body
   b. Describe the function of joints including their normal range and pattern of motion
   c. Analyze anatomical features that influence normal range and pattern of motion

3. Muscles
   a. Locate, identify and describe the attachments, innervation, blood supply, actions and morphology of selected skeletal muscles
   b. Determine how the location and points of attachment of skeletal muscles relative to joints influence their function
   c. Construct diagrammatically and on a living subject the lines of pull of muscles of the limbs, trunk, head and neck.
   d. Describe the role of muscles as movement generators and proprioceptors

4. Vascular System
   a. Conceptualize the vascular structures as a closed system driven by a pump, which propels fluids through various size tubes and chambers.
   b. Map the major arteries and veins within the extremities and trunk.

5. Peripheral Nervous System
   a. Identify major peripheral nerves of the upper and lower extremities and trunk
   b. Identify the components of the lumbosacral and brachial plexuses

6. General
   a. Conduct movement analysis of a sporting skill or exercise, identifying which muscles are active in producing and controlling a movement at a particular joint

Evaluation Criteria and Grading

	Description	Date	Value
Lecture			**70%**
Participation	Small stakes quizzes on Canvas 60-minute time limit	Due Wednesdays prior to the start of class See Canvas for details	**10%** 10 x 1%
Midterm Examination 1	Leg/Thigh/Torso [L01-L05] consists of MC/Short answer/long answer movement focused question	Friday, October 10	**15%**
Midterm Examination 2	Torso/Shoulder/Arm [L01-L05] consists of MC/Short answer/long answer movement focused question	Friday, November 7	**20%**
Final Examination	cumulative, with focus on Forearm [L01-L05] consists of MC/Short answer/long answer movement focused question	Final Exam Period	**25%**
Laboratory			**30%**
Practical Examination 1	Leg/Thigh/Torso [L01-L05] Timed station exam using anatomical models. Identification of a structure and follow up questions regarding function, location, supporting structures	Tuesday, October 21 Wednesday, October 22	**15%**
Practical Examination 2	Torso/Shoulder/Arm/Forearm L01-L05] Timed station exam using anatomical models. Identification of a structure and follow up questions regarding function, location, supporting structures	Tuesday, December 2 Wednesday, December 3	**15%**

As per the HES Policies, ***you must pass both the lab and lecture components of a course*** to receive a passing grade in that course. If you happen to fail one of these components, even if your total grade is above 50%, then your final grade will be 49%

Required Readings and Videos

Drake R (2023) Gray's Anatomy for Students. 5TH Edition. Elsevier (older versions are acceptable)

Recommended Software

Complete Anatomy 3D4Medical

Recommended Readings

Biel A (2019) Trail Guide to the Body: A hands-on guide to locating muscles, bones and more. 6th Edition. Books of Discovery.

Behnke RS (2012) Kinetic Anatomy. 3rd Edition. Human Kinetics (this is a very basic textbook, but is quite user friendly- really, a must have for an HES student)

Cael C (2010) Functional Anatomy: Musculoskeletal Anatomy, Kinesiology, and Palpation for Manual Therapists. Lippincott, Williams & Wilkins (this is designed for massage therapists. Is good for palpation information)

Moore KL, Dalley AF & Agur AMR (2012) Clinically Oriented Anatomy. 7th Edition. Lippincott, Williams & Wilkins (a big book!)

Additional readings will be provided throughout the course to complement textbook reading

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. **For example, incidences of plagiarism or cheating usually result in a failing grade or mark of zero on the assignment or in the course.** Careful records are kept to monitor and prevent recidivism.

A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at:
http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,54,111,0

Generative Artificial Intelligence Tools (e.g., ChatGPT)

Use of generative artificial intelligence tools to complete coursework in this course is prohibited in all cases. Use of these tools is considered an unauthorized means to complete an examination or other assignment or assessment and would be considered academic misconduct.

Final Examinations

You can find the Senate-approved term and examination dates here. Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 27-hour period) or unforeseen events, students will be permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member. Unforeseen events include (but may not be limited to) the following: ill health or other personal challenges that arise during a term and changes in the requirements of an ongoing job.

Further information on Academic Concession can be found under Policies and Regulation in the Okanagan Academic Calendar http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0

Grading Practices

Faculties, departments, and schools reserve the right to scale grades in order to maintain equity among sections and conformity to University, faculty, department, or school norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the faculty, department, or school. Grades are not official until they appear on a student's academic record.
http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014

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Student Services Resources:

UBC Okanagan Disability Resource Centre

The DRC facilitates disability-related accommodations and programming initiatives to remove barriers for students with disabilities and ongoing medical conditions. If you require academic accommodations to achieve the objectives of a course please contact the DRC at:

UNC 215 250.807.8053
email: drc.questions@ubc.ca
Web: www.students.ok.ubc.ca/drc

UBC Okanagan Equity and Inclusion Office

Through leadership, vision, and collaborative action, the Equity & Inclusion Office (EIO) develops action strategies in support of efforts to embed equity and inclusion in the daily operations across the campus. The EIO provides education and training from cultivating respectful, inclusive spaces and communities to understanding unconscious/implicit bias and its operation within in campus environments. UBC Policy 3 prohibits discrimination and harassment on the basis of BC's Human Rights Code. If you require assistance related to an issue of equity, educational programs, discrimination or harassment please contact the EIO.

UNC 325H 250.807.9291
email: equity.ubco@ubc.ca
Web: www.equity.ok.ubc.ca

Student Wellness

At UBC Okanagan health services to students are provided by Student Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Student Wellness for more information or to book an appointment.

UNC 337 250.807.9270
email: healthwellness.okanagan@ubc.ca
Web: www.students.ok.ubc.ca/health-wellness

Office of the Ombudperson

The Office of the Ombudsperson for Students is an independent, confidential and impartial resource to ensure students are treated fairly. The Ombuds Office helps students navigate campus-related fairness concerns. They work with UBC community members individually and at the systemic level to ensure students are treated fairly and can learn, work and live in a fair, equitable and respectful environment.

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Ombuds helps students gain clarity on UBC policies and procedures, explore options, identify next steps, recommend resources, plan strategies and receive objective feedback to promote constructive problem solving. If you require assistance, please feel free to reach out for more information or to arrange an appointment.

UNC 328 250.807.9818
email: ombuds.office.ok@ubc.ca
Web: www.ombudsoffice.ubc.ca

Student Learning Hub

The Student Learning Hub is your go-to resource for free math, science, writing, and language learning support. The Hub welcomes undergraduate students from all disciplines and year levels to access a range of supports that include **tutoring in math, sciences, languages, and writing, as well as help with study skills and learning strategies**. Students are encouraged to visit often and early to build the skills, strategies and behaviors that are essential to being a confident and independent learner. For more information, please visit the Hub's website.

LIB 237 250.807.8491
email: learning.hub@ubc.ca
Web: www.students.ok.ubc.ca/slh

The Global Engagement Office

The Global Engagement Office provides advising and resources to assist International students in navigating immigration, health insurance, and settlement matters, as well as opportunities for intercultural learning, and resources for Go Global experiences available to all UBC Okanagan students, and more.

Come and see us – we are here to help! You may also contact geo.ubco@ubc.ca

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Safewalk

Don't want to walk alone at night? Not too sure how to get somewhere on campus? Call Safewalk at ***250-807-8076.***

For more information, see: www.security.ok.ubc.ca