STRUCTURE OF THE HUMAN BODY 2025-2026 COURSE INFORMATION

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1. COURSE OVERVIEW

The primary goal of the Structure of the Human Body course is to provide students with a firm understanding of the general gross anatomy, neuroanatomy and development (embryology) of the human body, including the osteology, musculature, circulatory system, viscera, and the human nervous system, including the cortex, brainstem, cerebellum, deep brain structures, spinal cord, peripheral nerves, sensory systems, motor systems, and the autonomic nervous system. This will be achieved through demonstrations using prosected donors, student dissection, anatomical models, plastinated specimens, online learning modules, labeled gross specimens and models, medical imaging, lecture, guided review sessions, and independent learning. Our course specific goals and objectives can be found on the SHB Sakai page under Course Information or at https://sakai.luc.edu/portal/site/9e6c59e6-fc09-4e55-a1ff-cf5b0b529440 .

2. METHODS OF INSTRUCTION:

A. Lectures

Most lectures will last 50 minutes; some shorter or longer depending on the faculty member. All lectures are prerecorded using the Panopto software platform and delivered asynchronously through Sakai or Lumen to view at your convenience. The PowerPoint presentation for each lecture will also be provided. Lectures are scheduled the night before the associated lab session but are generally available several days ahead of time. Lectures are essential to understanding what is presented in the laboratory sessions, so ***please view these ahead of time*** so that you are prepared for lab. **Adequate background preparation by the student is necessary in order to benefit from the laboratory sessions. PLEASE come to all laboratory sessions ready to identify structures referred to in the lectures.**

A textbook is recommended for reference, although a student can excel in the course by watching the lecture videos, using the resources on Sakai, attending labs, and studying the PowerPoint presentations.

Clinical correlation lectures illustrate the clinical applications of gross anatomy. Anatomical concepts from these lectures can be included on the exams, but examination questions will not refer to specific cases or examples given by the clinical faculty during these lectures.

B. Laboratory Sessions

Anatomy is a visual and practical discipline which relies ***heavily*** on the laboratory as a learning forum. Please remember that a rewarding experience for the student of gross anatomy is largely dependent upon the wisdom, foresight and social conscience of those who donate their bodies for research and education after death. Make the most of this unique and important learning experience. These donors are your first "hands-on training" with a patient.

In line with current school policy, attendance at Small Group Lab Sessions is **Mandatory, *and attendance will be taken daily.*** Failure to attend and participate in laboratory sessions will result in an evaluation of ***Does Not Meet Expectations*** in your Professional competency component of the course. If, for whatever reason, you find that you have a legitimate reason for being unable to attend a particular small laboratory session, you should seek advance permission from the Office of Student Affairs. Please note that laboratory sessions will not be recorded. Violation of laboratory rotation protocol (switching sessions without expressed permission by the course director or assistant course director) may also result in a "Professionalism" mark of concern.

The SHB laboratory is a self-directed, hands-on, small group learning experience. Students will be assigned to one of three lab sessions starting at either 8:30 am, 9:30 am, or 10:30am. Each group will spend 55 minutes in the laboratory each day reviewing the assigned "Should-Find" list of structures. Students will be provided with a variety of teaching aides including bones, skeletons, models, worksheets, drawings, prosected donors (whole body), prosected specimens, plastinated specimens, and digitized images. Instructors will be available to aide in verifying structures from that day's "Should Find" list. Students will work together in small groups to identify structures using the knowledge gained from the pre-recorded lectures. After each exam, the groups will rotate to a new starting time.

Students will have the opportunity to dissect and discover for themselves the anatomy of the human body. Students interested can sign up to participate in the dissection of the region relevant for the upcoming exam. Students will work within a group (6-7 students) to dissect and explore the region assigned. The laboratory is open 24 hours. The time commitment for this activity is 5-10 hours. Students should be prepared to find, clean and identify as many structures on the assigned "Should Find" list as possible. Faculty will be available to assist in both basic techniques for dissection and identification of the associated structures you should be able to find. Care must be taken during dissection to avoid damaging the structures that need to be identified. A laboratory dissection guide will be available for the specific areas to be dissected.

C. Independent Learning, Computer-Based Instruction and other Learning Resources:
The SHB Sakai page is designed to promote the use of multimedia in the integration of the basic and clinical sciences. A variety of other teaching aids are available, including:

- ***Individual bones and full skeletons*** - available for study in the SHB lab (L60).
- ***Epoxy-embedded sectioned human bodies*** - on display in the LL hallway.
- ***Gross anatomy models*** - to be studied in the laboratory during lab sessions or outside of lab sessions. The library also has an extensive collection of models and bone boxes which can be checked out (requests can be made at the front desk).
- ***Prosected donors*** - available in the laboratory.
- ***Student-dissected donors*** - available in the laboratory.
- ***Practice questions and Self-Assessment modules*** – available on Sakai.
- ***Lecture content review questions*** – available on Sakai.
- ***Third-party sites and online anatomy programs*** – available on Sakai.

3. ATTENDANCE AND ABSENCES

Unexcused absences or violation of rotation protocol will result in a mark for "Concern" within the ***Professionalism*** Competency Assessment of the student grade. All absences must be approved by the office of Student Affairs. Notify the Course Director, Dr. Frysztak, and the Course Coordinator, Jessica Bumbaris, via email once the absence has been approved. Multiple unexcused absences will require a meeting with the Course Director or the Assistant Course Director. Students are required to follow the protocol listed in the Academic Policy Manual:

Per the Academic Policy Manual: *Petitions for approved absences for serious but non-emergent reasons from activities in which attendance is mandatory (i.e. labs, quizzes, exams) must be submitted prior to the start of the course, if possible, but in no case less than one month before the date in question. Such petitions are to be reviewed by the Course Director, Course Coordinator, and Associate Dean for Student Affairs or designate. A student must have a serious reason for an excused absence or request for a change in an exam date. The petition should detail the nature of the conflict and available supporting documentation should be attached (e.g., copy of a jury summons or invitation to present a poster).* ***A petition for permission to be absent is a request, requires review, and is not automatically approved simply by submission.***

A. Laboratory:
Laboratory attendance is mandatory. Students must attend lab with their assigned lab group, during their scheduled lab time. Students are not permitted to change groups or attend another lab time other than that which they are scheduled to attend.

B. Exams:
Students who are ill or have other extenuating circumstances either immediately prior to, or on a scheduled exam day, **must** contact the Dean of Student Affairs prior to the exam to obtain an excused absence. Excused absences are granted according to university policy; proper documentation will be required, and no exceptions will be made. You must also notify Jessica Bumbaris, the SHB Course Coordinator, so that alternative arrangements for a make-up exam can be made.

4. IMPORTANT DATES

Important Dates:	
Sept. 23:	**Opening Blessing Ceremony (Required)**
Sept. 24:	**First Day of SHB lab**
Sept. 29 thru Oct. 3:	**Fall Break**
Oct. 17:	**Exam 1**
Nov. 4:	**Exam 2**
Nov. 18:	**Exam 3**
Dec. 5:	**Exam 4**
Dec. 8:	**Closing Blessing Ceremony (Required)**
Dec. 18:	**Exam 5 (exact date determined by registrar)**

5. TEXT BOOKS and RESOURCES:

Most texts are available electronically via the Health Sciences Library website.

A. RECOMMENDED TEXTS:

Hansen, J.T. (2019/2022). ***Netter's Clinical Anatomy,*** 4th or 5th edition, Elsevier Inc. ISBN 978-0323531887 or 978-0323826624; Digital Version: 978-0323826631

Rohen, J.W., *et al*., (2015). **Color Atlas of Anatomy: A Photographic Study of the Human Body, 8th ed.,** Wolters Kluwer / Lippincott Williams & Wilkins. ISBN 978-1451193183.

Netter, F.R. (2019). ***Atlas of Human Anatomy,*** **7th ed.** Saunders. ISBN 978-0323393225.

Mtui, E., Gruener, G, and Dockery, P. (2015). ***Fitzgerald's Clinical Neuroanatomy and Neuroscience,*** **7th ed.** Elsevier. ISBN 9780702058325.

Sadler, T. W. (2014). ***Langman's Medical Embryology*****, 13th ed.** Lippincott Williams & Wilkins. ISBN 978-1451113420.

Gilroy, A.M. et al., (2020). ***Atlas of Anatomy, 4th ed.,*** Thieme. ISBN 978-1684202034.

Haines, D.E. et al., (2011). ***Neuroanatomy: An Atlas of Structures, Sections, and Systems, 8th ed.,*** Lippincott Williams & Wilkins, ISBN 978-1605476537.

Cochard, L.R., *et al.* (2011). ***Netter's Introduction to Imaging,*** **1st ed.** Saunders. ISBN 978-1451191646.

B. **RECOMMENDED FLASHCARDS*:***

Hansen, J.T. (2014). ***Netter's Anatomy Flash Cards*, 4th ed.**, Saunders. ISBN 978-0323185950. [Cards] (Not available via the Health Science Library; See Dr. Frysztak)

C. EMBRYOLOGY VIDEOS:

Link to Library resources

6. ASSIGNMENTS & EXAMS

A. Dissection:

Dissection is voluntary. Due to the limited space and number of available donors, we ask that students commit to doing dissection by signing up for the faculty supervised dissections in advance. Dissection sessions are generally held on Thursday & Friday in the afternoons. Additional (unsupervised) time may be necessary for students to fully complete a particular dissection. The lab is available to students 24 hours during the course, so you can continue to dissect whenever your schedule allows.

B. Examinations:

There are a total of five written exams throughout the course. Each exam will consist of:

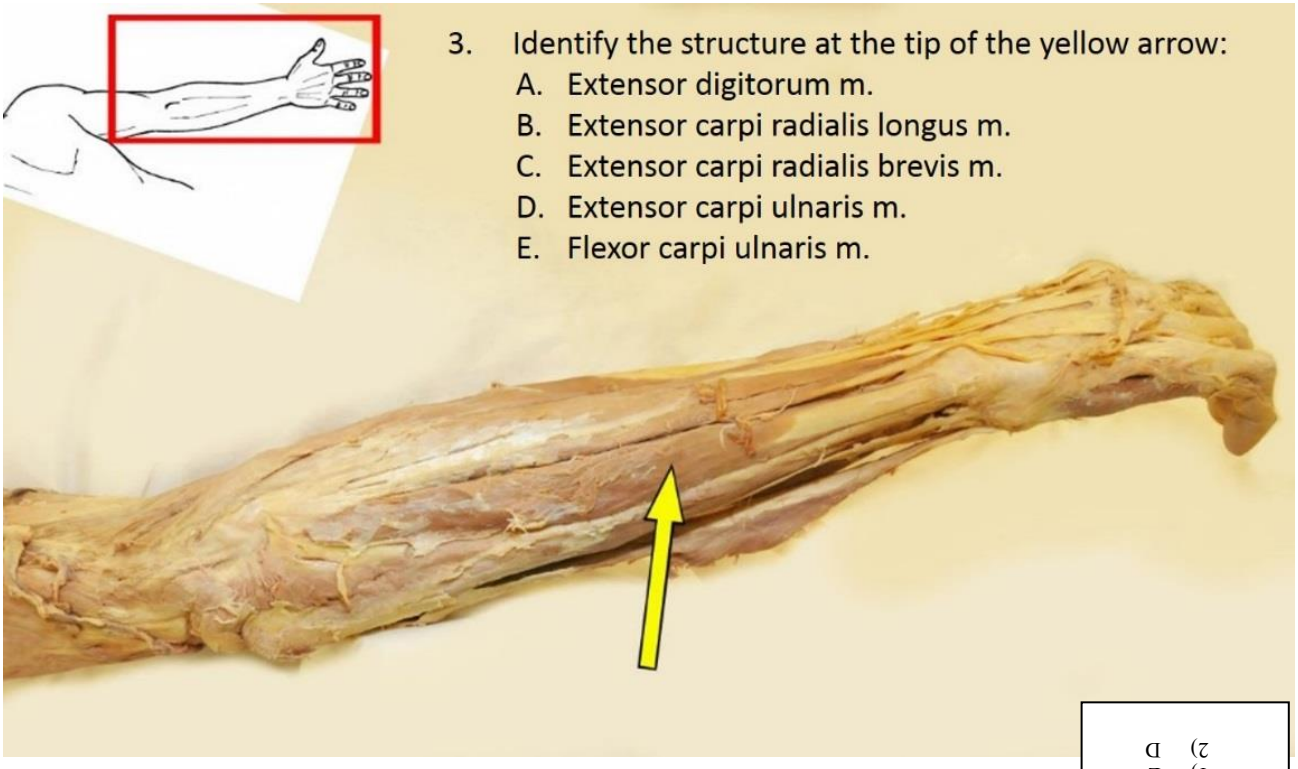
- **4 multiple-choice type questions per lecture hour** and will follow the format suggested by the USMLE Board of Examiners (vignette style questions).
- **3 practical style identification questions per lab session**, using digitized images from the donor bodies and specimens in the lab. These images may include exceptional student dissections. Each question will contain an image and 5 choices.
- All exams are completed in an online format, and may also contain radiological images, cross-sectional images, drawings, and other visuals.
- The majority of written questions will be in the USMLE-best answer format, and ALL will be directly linked to a specific learning objective. Practical questions are typically identification but may include 2nd-Order questions.
- Since ultrasound is paired with the SHB course, there will be multiple-choice questions on the SHB exam based on the ultrasound training you received throughout the course.
- After each exam you will receive back a report including your exam score and a list of the learning objectives linked to the questions that you answered incorrectly. This list should serve as the basis for re-reviewing course content to ensure your full understanding of course concepts, and content for the future.
- All students are expected to sit for each exam at the date and time indicated in the course schedule, as documented in the SSOM Academic Policy Manual. If circumstances arise that may prevent you from taking a scheduled examination (e.g. serious illness or an emergency situation) you should immediately contact **BOTH** the Office of Student Affairs **AND** the course directors/course coordinator as soon as possible, so that a timely determination can be made regarding a potential excused absence. Students who are unable to sit for an exam for a **legitimate** reason, as adjudicated by the Office of Student Affairs, will have their exam rescheduled for a later date. The rescheduling of any exams will be determined by mutual agreement of the Office of Student Affairs, the Office of Educational Affairs, and the Course Director, as outlined in the SSOM Academic Policy Manual.

- **Academic Honesty**
  Per the Academic Policy Manual, students must practice academic honesty in all examinations and assignments. Students who do not follow this practice will be reported to Student Affairs for further review, which may lead to dismissal.
- ***The following is an example of a typical "boards style" written exam question:***

A 32-year-old man is admitted to the emergency room experiencing visual problems. Physical examination reveals a loss of his peripheral visual fields in both eyes (bitemporal hemianopsia or "tunnel vision"). CT scans reveal a tumor of the anterior pituitary gland in the hypophyseal fossa. Which one of the following structures is most likely being compressed by the tumor?

A. Optic nerve
B. Optic tract
C. Oculomotor nerve
D. Trochlear nerve
E. Optic chiasm

- ***The following is an example of a digital practical question:***



C. REFLECTION:

Every student will be required to write a reflection on their human anatomy experience (due on or before December 9th). The reflection is an independent **PASS/FAIL component** of the SHB Course. This should be based on how utilizing a human donor to learn human anatomy affected your educational process, your ability to empathize with your "first patient," and your perception of medicine in general. ***These reflections will be included in a book which will be made available to the families of donors.*** Students that either do not complete the reflection, or fail to meet expectations, will be required to remediate their performance.

D. EVALUATIONS:

Evaluations of faculty, the course in general, and other evaluations dictated by the administration are an extremely important component for updating and improving the SHB Course and your education in general at Stritch. ***Filling them out on a timely basis is also a part of the course expectation for professionalism.*** Please be honest and mindful of what you include on these evaluations. Honest criticism is helpful to improving content delivery and the overall efficiency of the course. Maintain your professionalism, focus on the facts, embrace a growth mindset, and provide thoughtful and constructive feedback, rather than focusing solely on superficial aspects of the course.

7. REVIEW SESSIONS

On most Fridays, and prior to each exam, faculty will hold an Open Lab Review session to any student questions on both lectures and labs. It is highly recommended that students take advantage of this learning opportunity and attend these sessions. This is your chance to ask the faculty directly any questions you have concerning the upcoming exam.

On most Fridays, faculty will host a USMLE-Style Review session LIVE in 190 following the open lab session. These Review sessions will include USMLE style questions, typical of what you will find on the exams. They will also help prepare you for your Part 1 Boards Exam by helping you become familiar to the USMLE style of questions.

8. GRADING

The final course grade will be based on your assessment of the Medical Knowledge and Professionalism competencies. The graded components are the five exams, which include 10 ultrasound questions. The maximum number of points possible in the course is 416. Each "point" has the same weight/value. The points available will be broken down as follows:

Component	Written	Digital Practical	Total
Exam 1	80	24	**104**
Exam 2	60 + 6 US	30	**96**
Exam 3	64	18	**82**
Exam 4	56 + 4 US	15	**75**
Exam 5	44	15	**59**
Dissection	-	-	
Total:	**314**	**102**	**416**

Final Grades: Medical Knowledge:

Final grades for medical knowledge are pass/fail based on cumulative exam and dissection performance. Passing is 70.0%.

Grade	Points Earned (416 possible)
Pass (70.0% and above)	**290-416**
Fail (< 70.0%)	**289 or less**

9. REMEDIATION

Students who fail to achieve the minimum score required for a passing grade in the course ***may be allowed the opportunity to take a make-up remediation exam*** if they have achieved an overall grade above 60% (250 points). The make-up exam will be prepared by the course director in collaboration with the Associate Dean for Medical Education and will be a rigorous yet fair assessment to ensure that the student has achieved sufficient mastery of the course content to be allowed to continue to the next academic level. Remediation exams will be administered at the end of the academic year and will be scheduled by the Office of Student Affairs and the Academic Center for Excellence in consultation with the Course Director.

All students requiring remediation (those who fail the SHB Course) ***must meet with the Course Director and ACE*** well in advance of the scheduled date of the exam to discuss both the exact format of the exam, and their proposed study approach. The SHB Remediation exam will consist of a comprehensive written examination (1 question per lecture, 1 question per lab). Those students achieving a score of greater or equal to **70%** on the remediation exam will have their failure (F) converted to a P*. Students who fail to successfully achieve the minimum passing score will receive a failing grade for the course, and be required either to repeat the course in its entirety, or alternatively, may be subject to automatic administrative action by the School, as outlined in the Academic Policy.

Please note that students with a final cumulative course score of less than 60% may be required to repeat the course. The decision to allow such students the opportunity to take a remediation exam will be made by the Student Promotions Committee following recommendations provided by the Course Director and ACE.

10. INTRODUCTION TO THE LABORATORY

As mentioned above (Section II. Methods of Instruction), students will be assigned to a section of 60 students as well as a smaller study group of 6. Each section will spend 55 minutes in the lab. Starting time will be based on your section, and each section will rotate to a new start time after each exam. Students will be required to find the structures listed on that day's "Should Find" list. If you would like to take notes during lab, it is recommended that you print the Should-Find List and bring it to the lab each day. Faculty will be available in the lab, as well as other clinical faculty and/or residents, to answer questions. Each lab group can view bones, models, and 7 faculty-completed prosections of donors, as well as other smaller specimens. Students should regularly check the SHB homepage for the lab schedule and group assignments.

A. LAB SET-UP:

The majority of SHB laboratory sessions are held in the Lower Level of the Stritch School of Medicine (Cuneo Bldg), Room L60, Bays A & B. A handful of labs will be held in L71 (primarily Neuroanatomy lab sessions). Due to the extremely small nature of the anatomical structures, three labs will be broadcast to 190 (Orbit, Face, Oral & Nasal cavities), followed by an open lab session.

B. LAB REGULATIONS:

1) Students are provided with gloves, scalpel blades, atlases and other dissection tools for use in the lab. ***Lab coats or scrubs are recommended during lab***, and especially during dissection sessions. Scrubs are readily available from many sources (Wal-Mart, resale shops, online resources, etc.). Green hospital scrubs are not allowed.

2) All exposed skin of students must be covered during dissection. Garments worn in the laboratory should be washed at frequent intervals. Shoes worn in the lab must adequately protect the top of the foot (***NO open-toed shoes or sandals***). Gloves must be worn by all persons dissecting human tissue. Students may wear lab coats over street clothes or non-hospital scrubs.

3) Unauthorized personnel are not allowed in the laboratory without the permission of the Course Director. Authorized persons include faculty of SSOM, residents, graduate students, and medical students currently enrolled in or assisting with the SHB or MSMP courses, the staff associated with these courses, and maintenance personnel.

4) Visiting student groups from high schools and other educational institutions are permitted entry after class hours only when accompanied by their school advisor and a faculty or staff member approved by the Simulation and/or Course Directors.

5) Members of the SSOM Committee on Admissions and office staff may accompany applicants to view the lab during class hours.

6) When you have finished working on or studying from a donor or specimen, **please ensure that the dissected region is damp and the donor or specimen is fully covered. This means zipping the protective body bag completely closed, and closing the table lid.**

7) **NO CAMERAS OR PHOTOGRAPHS ARE ALLOWED.**

8) No human tissue, skeletal material, electric and non-electric dissection tools, or materials used to cover the specimens may be taken from the laboratory at any time.

9) Smoking, eating, and drinking are not permitted in the laboratory.

10) At ALL times, a **respectful attitude** must be maintained toward the donors, which have been obtained for your benefit.

11) Students are required to maintain the laboratory in a clean, orderly condition. Do not leave paper towels, gloves or other trash on the floors or tables. Return all tools used to the appropriate cupboards, bins or drawers. Place used scalpel blades in the **red safety (SHARPS) containers** labeled for this purpose. Compliance for maintaining a clean and orderly lab environment is a component of the Professionalism competency goal for SHB and SSOM.

12) Fluid must be drained from the dissecting table if it accumulates. A small amount (1/4 inch) is acceptable. Please wipe up any spills on the floor immediately, as spills make the floor hazardous. Please notify an instructor if the fluid buckets below the table are full so that lab personnel can empty them into the appropriate disposal container.

13) Respect for others in the close-quarter conditions of the lab around the dissection tables must be shown. If you are ill or have an upper respiratory tract infection, a surgical mask should be worn to cover the mouth and nose. If you test positive for Covid, please follow all guidelines as regularly posted by the University.

14) Report any injury (laceration, fall), lightheadedness, or skin irritation to a faculty member immediately. If injured, you may be taken/escorted to the ER for treatment, or security may be called to initiate transport if necessary.

15) **Professional behavior must be exhibited at all times. No disrespect toward fellow students, faculty, staff, the laboratory and its resources, or the donors will be tolerated at any time.**

16) No music playing (including phones) is allowed during scheduled lab sessions. After 3 pm, tolerant music playing is permitted, or you may use your earbuds.

C. LAB SECURITY:

The Multifunction Labs (L60) are open 24/7 to first year medical students, faculty and other personnel possessing the proper identification and key card access. Students are expected to comply with the Laboratory Regulations (Section 10-B) at all times.

Washroom facilities (with showers) are provided immediately adjacent to the dissection area in the lower level hallway outside L60A. The hallways immediately outside the lab (L60A) are secure areas (ID access only). Please leave backpacks and other items outside the lab. Changing space and lockers are available in the hallway immediately adjacent to the main elevators. Please bring a lock to ensure your belongings are secure. Faculty & staff are not responsible for any lost or stolen items. Please maintain the cleanliness of these areas as a courtesy to the many others using them. All personal items must be removed from lockers daily. The gray lockers will be emptied at the end of the course and all materials disposed of.

Visitors to the facility **must** be cleared through the course directors (please see Laboratory Regulations).

D. DONORS:

Prior to the development of body donor programs, the majority of bodies used in medical education were from unidentified or unclaimed individuals. As more people began to donate their bodies in the last half of the 20th century, many institutions have been able to use ***consented donors*** for all of their medical education needs. In the state of Illinois, Stritch faculty are board members of the Anatomical Gift Association of Illinois (https://www.agaillinois.org/). The AGA strictly adheres to a consented donation process for *all* anatomical specimens.

The nomenclature used to refer to these individual donors has unfortunately not changed at the same pace. Many educators, students and lay persons still refer to these individuals as "cadavers" or "corpses." While technically correct, is not as respectful as the term "donor." The terms "cadaver" and "corpse" when used in everyday language imparts an impersonal reference to an unfamiliar body that has not been ascribed a specific purpose, role, or outcome. Often, these terms may have a negative connotation in many people's minds.

Since these individuals altruistically donated their bodies to the institution ***specifically*** for your benefit as medical students, it is more appropriate to refer to them as "donors."

By using appropriate terms in the anatomy laboratory, the proper respect for the donors can be maintained, humanity can be ascribed to the donors, and this can assist the professional development and identity formation of you, the students. Please be respectful and mindful that our donors were mothers, fathers, sisters, brothers, aunts, uncles and dear friends to those that loved them throughout their lives. Their commitment and sacrifice to donate their bodies so that you can learn the intricacies of the human body should be honored and revered.

Faculty and staff will try to consistently model this behavior in all their interactions with students both in and out of the lab, and with the general public, to foster respect and dignified approaches to the processes of body donation and the use of donor bodies.

E. EMBALMING:

The embalming process is done professionally by State of Illinois-licensed embalmers employed by the AGA of Illinois. All human tissues used in the course are obtained from the AGA of Illinois, which receives them as donations.

The embalming solution contains:

- 5% formaldehyde
- 33% methanol
- 33% glycerine
- 27% phenol.
- MSDS sheets for each component are available upon request.

Students who experience respiratory or contact-sensitivity reactions to these ingredients are advised to notify the Course Director and seek medical attention, if necessary. Adequate precautions against skin contact must be taken (e.g. wearing gloves, wearing proper dissection clothing and lab coats, as well as impermeable plastic aprons, face masks, etc., as necessary). Our Safety and Security office inspects the dissection bays; air handling and air exchange are at OSHA standards that are monitored and maintained.

F. HUMAN DIVERSITY:

As a health care professional, it is important to be aware and acknowledge the diversity in the human form. While you should know the common aspects of human anatomy, you should continually appreciate the wide variety inherent in the people you serve. Each of your patients will represent one small portion this broad swath of humanity.

The question of inclusive anatomical representation has only very recently also been addressed by the American Association of Medical Illustrators and the American Association for Anatomy. We hope that a wider variety of images will be forthcoming in the future. Until then, we appreciate any recommendations and your understanding in this work.

11. CONTACT INFORMATION:

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