IMPORTANT: This syllabus form should be submitted to OAA (gsbs_academic_affairs@uth.tmc.edu) a week before the start of each semester.

NOTE to STUDENTS: If you need any accommodations related to attending/enrolling in this course, please contact one of the Graduate School's 504 Coordinators, Cheryl Spitzenberger or Natalie Sirisaengtaksin. We ask that you notify GSBS in advance (preferably at least 3 days before the start of the semester) so we can make appropriate arrangements.

Term and Year: Spring 2022 **Course Number and Course Title: GS12 1164 Human Pathobiology** **Credit Hours:** **Meeting Location: Hybrid** **Building/Room#:** **WebEx/Zoom Link: Zoom**	**Program Required Course:** Yes No **Approval Code:** Yes No **(If yes,** the Course Director or the Course Designee will provide the approval code.) **Audit Permitted:** Yes No **Classes Begin: 1/10/22** **Classes End: 4/29/2022** **Final Exam Week: May 2-6, 2022**

Class Meeting Schedule

Day	Time
Tuesdays/Thursdays	**1:00 – 3:00 pm**

Course Director
Name and Degree: Maximilian Buja, MD
Title: Professor
Department: Pathology and Laboratory Medicine
Institution: *UTH* *MDACC*
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Course Co-Director/s: (if any)
Name and Degree: **Robert C. Bast, Jr., MD**
Title: Professor and Vice President
Department: Translational Research
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Instructor/s

1. **Maximilian Buja, MD – UTH**
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2. **Priyadharsini Nagarajan, MD, PhD - MDACC**
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Course Co-Director/s: (if any)

Name and Degree: **Scott Kopetz, MD, PhD**

Title: Associate Professor

Department: GI Medical Oncology

Institution: *UTH* *MDACC*

Email Address: SKopetz@mdanderson.org

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NOTE: Office hours are available by request. Please email me to arrange a time to meet.

Program Coordinator: **Ruby Robinson**; rrobin@mdanderson.org ; 713-745-3956

9. **Aysegul Sahin, MD – MDACC**
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22. **Phyu Aung, MD – MDACC**
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23. **Jason Huse, MD PhD – MDACC**
E-mail: JHuse@mdanderson.org

Course description: This is a one-semester course designed to provide an introduction to human health and disease at the molecular, cellular, tissue, and system levels for each human organ system. Lectures will highlight the key elements routinely covered in medical school: histology, anatomy, physiology and pathophysiology courses with an emphasis on the understanding of the mechanisms of cell injury and death, inflammation and repair, immunopathology, vascular disturbances and carcinogenesis. The course will include two two-hour lectures each week, review of slides will be included in each lecture. Students will have opportunities to examine histological and pathologic specimens (using scanned slides), be introduced to human anatomy and physiology and spend time integrating knowledge into clinical

scenarios. This is a required course for all students in the Clinical and Translational Oncology Track of the Cancer Biology Program.

Textbook/Supplemental Reading Materials (if any)

- Pawlina W. Histology: A Text and Atlas – With Correlated Cell and Molecular Biology, 8th edition. Philadelphia: Wolters Kluwer, 2020.
- Kumar V, Abbas AK, Aster JC. Robbins Basic Pathology, 10th Edition. Philadelphia: Elsevier, 2018.

Course Objective/s:
Upon successful completion of this course, students will

***Specific Learning Objectives*:**

1. Gain basic knowledge of human anatomy, histology, physiology, and pathology.
2. Understand basic principles of pathobiology.
3. Learn basic information about the pathology of the various organ systems with applications to clinical manifestations of disease and translational research.

Student responsibilities and expectations:

Students enrolled in this course will be expected to perform the following activities each week.

1. Read, process, and review (study) material pertinent to the lecture topics for each session.
2. Participate in and contribute to course discussions during lecture and review sessions
3. Prepare for and take a mid-term and a final examination based on lectures and some reading material. .

Students are expected to complete all assigned reading material (reviews and research literature) prior to class. While you may work and discuss all course materials and assignments in groups, all writing assignments must be your own. Plagiarism and failure to properly cite scientific literature and other sources will not be tolerated and are grounds for dismissal from the course and further GSBS disciplinary action. Cheating or engaging in unethical behavior during examinations (quizzes and final) will be grounds for dismissal from the course without credit and further GSBS disciplinary action.

Grading System: **Letter Grade (A-F)** Pass/Fail

Student Assessment and Grading Criteria : *(May include the following:)*

Percentage	Description
Midterm Exams (45%)	Mid-term examination based on lectures 1-14
Final Exam (45%)	Final examination based on lectures 15-29
Participation and/or Attendance (10%)	Sign in attendance; more than 2 unexcused absences put a passing grade in jeopardy

CLASS SCHEDULE

Date	Lecture Topic	Lecturer/s
1/11/22	Introduction: Basics of Histology and Pathology\ Histology and Pathology	Maximilian Buja, MD - UTH Professor, Department of Pathology
1/13/22	Cell & Tissue Injury, Adaption and Death Robbins/Kumar Chpt 1- The Cell	Maximilian Buja, MD - UTH Professor, Department of Pathology
1/18/22	Inflammation and Repair Robbins/Kumar Chpt 2 - Cell Injury, Cell Death & Adaptations	Maximilian Buja, MD - UTH Professor, Department of Pathology
1/20/22	Major Circulatory Disturbances Robbins/Kumar Chpt 3 - Inflammation and Repair	Maximilian Buja, MD - UTH Professor, Department of Pathology
1/25/22	Immune 1: The Lymphoid System Robbins/Kumar Chpt 5 - Diseases of the Immune System	Priyadharsini Nagarajan, MD PhD - MDACC Associate Professor, Dermatopathology
1/27/22	Immune 2: Properties of the Immune System Robbins/Kumar Chpt 5 - Diseases of the Immune System	Beenu Thakral, MD - MDACC Associate Professor, Hematopathology
2/1/22	Stromal-Epithelial Interactions – Tumor Biology Robbins/Kumar Chpts 1, 2, 3 & 6	David Rowley, PhD - BCM Professor, Department of Molecular & Cellular Biology
2/3/22	Basic Concepts in Cancer Robbins/Kumar Chpt 6 - Neoplasia	Gustavo Ayala, MD - UTH Professor & Vice Chair for Outreach
2/8/22	Environmental Pathology Robbins/Kumar Chpt 8 - Environmental and Nutritional Diseases	Melissa Taggart, MD – MDACC Assoc. Professor, Department of Pathology
2/10/22	CNS – Architecture, Histology and Neurodegenerative Disease Robbins/Kumar Chpt 23 - Central Nervous System	Leomar Ballester, MD PhD - MDACC Assist. Professor, Department of Pathology
2/15/22	Benign Hematopathology Robbins/Kumar Chpt 12 - Hematopoietic and Lymphoid Systems	Amer Wahed, MD - UTH Assoc. Professor, Department of Pathology
2/17/22	Breast Pathology Robbins/Kumar Chpt 19 - Female Genital System and Breast	Aysegul Sahin, MD - MDACC Professor, Department of Pathology
2/22/22	Respiratory 1: An Overview of Non-Malignant Pulmonary Diseases Robbins/Kumar Chpt 13 - Lung & Chpt 9 - General Pathology of Infectious Diseases	Bihong Zhao, MD PhD - UTH Assoc. Professor, Department of Pathology
2/24/22	Respiratory 2: Pathology of Tumors of the Lung and Pleura Robbins/Kumar Chpt 13 - Lung	Annikka Weissferdt, MD - MDACC Assoc. Professor, Department of Pathology

2/24/22	**Mid-Term Exam** **Lectures 1-14**	**Due: 3/1/2022**
3/1/22	Pediatric Genetic Disorders, a Brief Overview Robbins/Kumar Chpt 7 - Genetic and Pediatric Diseases	Amanda Tchakarov, MD - UTH Assist. Professor, Department of Pathology
3/3/22	Hematopoietic and Lymphoid System Neoplasms Robbins/Kumar Chpt 12 - Hematopoietic and Lymphoid Systems	James You, MD PhD - MDACC Professor, Department of Hematopathology
3/8/22	Common Tumors in Female Reproductive System & New Theory for the Origin of Human Tumors Robbins/Kumar Chpt 19 - Female Genital System & Breast	Jinsong Liu, MD, PhD – MDACC Professor, Department of Pathology
3/10/22	Endocrine System Robbins/Kumar Chpt 20 - Endocrine System	Miao Zhang, MD PhD - MDACC Assoc. Professor, Department of Pathology
3/14-18	**SPRING BREAK – NO CLASSES**	
3/22/22	Gastrointestinal Tract Robbins/Kumar Chpt 15 - Oral Cavities and Gastrointestinal Tract	Rebecca Waters, DO – MDACC Assistant Professor, Depart of Pathology
3/24/22	Understanding Kidney Disease Robbins/Kumar Chpt 14 - Kidney and Its Collecting System	Amanda Tchakarov, MD - UTH Assist. Professor, Department of Pathology
3/29/22	Cardiovascular System I – Blood Vessels Robbins/Kumar Chpt 10 – Blood Vessels	Maximilian Buja, MD - UTH Professor, Department of Pathology
3/31/22	Cardiovascular System II – The Heart Robbins/Kumar Chpt 11 - Heart	Maximilian Buja, MD - UTH Professor, Department of Pathology
4/5/22	Nerve and Muscle Robbins/Kumar Chpt 22 - Peripheral Nerves & Muscles	Meenakshi Bhattacharjee, MD - UTH Professor, Department of Pathology
4/7/22	Liver and Gallbladder / Diseases of the Pancreas Robbins/Kumar Chpt 16 - Liver and Gallbladder & Chpt 17 - Pancreas	Alejandro Contreras, MD – MDACC Assoc. Professor, Department of Pathology Anirban Maitra, MBBS - MDACC Professor, Department of Pathology
4/12/22	Testicular Tumors: A Clinicopathologic Approach Robbins/Kumar Chpt 18 - Male Genital System and Lower Urinary Tract	Kanishka Sircar, MD - MDACC Professor, Department of Pathology
4/14/22	Dermatopathology Robbins/Kumar Chpt 24 - Skin	Victor Prieto, MD PhD - MDACC

		Chair, Department of Pathology Phyu Aung, MD - MDACC Assoc. Professor, Department of Pathology
4/19/22	The Evolving Landscape of Oncologic Diagnosis Convergence of Imaging, Histology, & Molecular Signature Robbins/Kumar Chpt 23 - Central Nervous system	Jason Huse, MD PhD – MDACC Assoc. Professor, Department of Pathology
4/21/22	Bone & Pathobiology of Selected Skeletal Malignancies Robbins/Kumar Chpt 21 - Bones, Joints, and Soft Tissue Tumors	David Rowley, PhD - BCM Professor, Department of Molecular & Cellular Biology Gustavo Ayala, MD - UTH Professor & Vice Chair for Outreach
4/26/22	**Wrap up session** **Final Exam – Lectures 15-30 – Due 4/29/22**	**Maximilian Buja, MD - UTH** **Professor, Department of Pathology**