

**IMPORTANT:** This syllabus form should be submitted to OAA ([gsbs\\_academic\\_affairs@uth.tmc.edu](mailto: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.

<p><b>Term and Year: Summer, 2024</b></p> <p><b>Course Number and Course Title: GS21 1361</b></p> <p><b>Credit Hours: 1</b></p> <p><b>Meeting Location:</b> BSRB S3.8367 (GSBS Gallick Classroom)</p> <p><b>Building/Room#:</b> UTHH – MD Anderson Cancer Ctr. 3<sup>rd</sup> Flr., BSRB, 6767 Bertner Ave.</p> <p><b>WebEx/Zoom Link:</b> (For first day of class only. Will disseminate)</p>	<p><b>Program Required Course:</b> <u>No</u></p> <p><b>Approval Code:</b> <u>No</u> (If yes, the Course Director or the Course Designee will provide the approval code.)</p> <p><b>Audit Permitted:</b> <u>Yes</u></p> <p><b>Classes Begin:</b> <b>May 14, 2024</b></p> <p><b>Classes End:</b> <b>June 27, 2024</b></p> <p><b>Final Exam Week:</b> <b>July 1, 2024</b></p>
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**Class Meeting Schedule**

Day	Time
Tuesday and Thursday	10:00-11:30 a.m.

<p><b>Course Director:</b></p> <p>Name and Degree: <b>Kristin Eckel-Mahan, PhD</b></p> <p>Title: <b>Associate Professor</b></p> <p>Department: <b>IMM</b></p> <p>Institution: <b>UTHealth Houston</b></p> <p>Email Address: <a href="mailto:Kristin.I.Mahan@uth.tmc.edu">Kristin.I.Mahan@uth.tmc.edu</a></p> <p>Contact Number: <b>713-500-2487</b></p> <p><b>Course Co-Director/s:</b></p> <p>Name and Degree: <b>Seung-hee Yoo, PhD</b></p> <p>Title: <b>Associate Professor</b></p> <p>Department: <b>BMB</b></p> <p>Institution: <b>UTHealth Houston</b></p> <p>Email Address: <a href="mailto:Seung-Hee.Yoo@uth.tmc.edu">Seung-Hee.Yoo@uth.tmc.edu</a></p>	<p><b>Instructors:</b></p> <ol style="list-style-type: none"> <li><b>Christophe Ribelayga, PhD</b> Institution: University of Houston Email Address : <a href="mailto:cpribela@central.uh.edu">cpribela@central.uh.edu</a></li> <li><b>Zheng Sun, PhD</b> Institution: Baylor College of Medicine Email Address : <a href="mailto:Zheng.Sun@bcm.edu">Zheng.Sun@bcm.edu</a></li> <li><b>Dongyin Guan, PhD</b> Institution: Baylor College of Medicine Email Address: <a href="mailto:Dongyin.guan@bcm.edu">Dongyin.guan@bcm.edu</a></li> <li><b>Kristin Eckel-Mahan, PhD</b> Institution: Email Address: <a href="mailto:Kristin.I.Mahan@uth.tmc.edu">Kristin.I.Mahan@uth.tmc.edu</a></li> </ol>
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<p>Contact Number: <b>713-500-6136</b></p> <p><b>NOTE:</b> Office hours are available by request. Please email me to arrange a time to meet.</p> <p><b>Teaching Assistant:</b> N/A</p>	<p><b>5. Seung-hee Yoo, PhD</b></p> <p>Institution: UTHealth Houston</p> <p>Email Address: <a href="mailto:Seung-Hee.Yoo@uth.tmc.edu">Seung-Hee.Yoo@uth.tmc.edu</a></p>
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**Course Description:**

This is a nano course aimed at students who would like to familiarize themselves with the concept of circadian timing. The course will introduce the students to the anatomical, biochemical, and molecular bases of circadian clocks, with an emphasis on the mammalian circadian system. The course will bring an understanding on how circadian rhythms are a fundamental property of living beings. Events underlying dysregulated clock function and subsequent impact on health will also be covered. The course will alternate lectures and student presentations of significant articles in the field. Active involvement of the students in class is expected.

**Textbook/Supplemental Reading Materials**

- **Weekly paper assignments**

**Course Objective/s:**

***Specific Learning Objectives:***

1. To understand key concepts of the physiological basis underlying circadian clocks and organization and homeostasis of the circadian system.
2. To identify key pathways involved in the entrainment of circadian clocks as well as key effectors of circadian clocks associated with the control of specific functions or behavior.
3. To learn how the daily changes in environmental factors and circadian clocks interact to modulate function and behavior on a daily or a seasonal basis.
4. To gain a working understanding of application and interpretation of experimental tests of circadian clock function that impinge on physiological processes.
5. To gain knowledge of emerging topics and techniques in the field of Circadian Biology.
6. To gain knowledge of the basis of diseases and behavior disorders linked to circadian dysfunction.

**Student Responsibilities and Expectations:**

Students are expected to have regular attendance and participation is essential. Weekly paper assignments will be presented and discussed by the students on Thursdays. A single final written exam will also be required of all students.

Grading System: <b>Letter Grade (A-F)</b>	
<b>Student Assessment and Grading Criteria</b> : <i>(May include the following:)</i>	
<b>Percentage</b>	<b>Description</b>
<b>Presentation (30%)</b>	Weekly paper assignment presented and discussed on Thursdays.
<b>Final Exam (30%)</b>	
<b>Participation and/or Attendance (40%)</b>	

#### CLASS SCHEDULE – Summer 2024

<b>Date</b>	<b>Duration (Hour(s) taught by lecturer)</b>	<b>Lecture Topic</b>	<b>Lecturer/s</b>
<b>May 14</b>	<b>30 min.</b>	<b>WEBEX:</b> Welcome, course description, faculty in introductions (Paper assignment from <b>Dr. Eckel-Mahan</b> ).	<b>Eckel-Mahan</b>
<b>May 16</b>	<b>90 min.</b>	Lecture and Discussion: Model systems and techniques used in circadian biology ( <b>Dr. Eckel-Mahan</b> ) Article presentation and discussion (Paper assignment from <b>Dr. Ribelayga</b> for 5/23)	<b>Eckel-Mahan</b>
<b>May 21</b>	<b>90 min.</b>	Entrainment of circadian clocks and masking mechanisms	<b>Ribelayga</b>
<b>May 23</b>	<b>90 min.</b>	<b>Student discussion of articles</b> (Paper assignment from <b>Dr. Eckel-Mahan</b> for 5/30)	<b>Students/Ribelayga</b>
<b>May 28</b>	<b>90 min.</b>	Circadian clocks and metabolism introduction, circadian disruption and cancer	<b>Eckel-Mahan</b>
<b>May 30</b>	<b>90 min.</b>	<b>Student discussion of articles</b> Article discussion (Paper assignment from <b>Dr. Yoo</b> for 6/6)	<b>Students/Eckel-Mahan</b>
<b>June 4</b>	<b>90 min.</b>	Anatomical features, and genetic and biochemical basis of the mammalian circadian system	<b>Yoo</b>
<b>June 6</b>	<b>90 min.</b>	<b>Student discussion of articles</b> Article discussion (Paper assignment from <b>Dr. Guan</b> for 6/13)	<b>Students/Yoo</b>

<b>June 11</b>	<b>90 min.</b>	Circadian clocks and gene regulation	<b>Guan</b>
<b>June 13</b>	<b>90 min.</b>	<b>Student discussion of articles</b> Article discussion (Paper assignment from <b>Dr. Sun</b> for 6/20)	<b>Students/Guan</b>
<b>June 18</b>	<b>90 min.</b>	Circadian clocks and metabolism II	<b>Sun</b>
<b>June 20</b>	<b>90 min.</b>	<b>Student discussion of articles</b> Article discussion (Paper assignment from <b>Dr. Ribelayga</b> for 6/27)	<b>Students/Sun</b>
<b>June 25</b>	<b>90 min.</b>	Social life, work schedule, and clock dysfunction in humans	<b>Yoo</b>
<b>June 27</b>	<b>90 min.</b>	<b>Student discussion of articles</b> Article discussion (Exam dissemination)	<b>Students/Ribelayga</b>
<b>July 5</b>		<b>EXAMS DUE</b>	

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