Until relatively recently, the circadian clocks in our bodies and their influences on nearly every aspect of physiology and brain function were largely ignored by the scientific and medical community. This changed dramatically in 1997 with the discovery of the first protein component of the mammalian clock. With this discovery, new clockwork proteins and mutations that affect circadian rhythms were discovered at a dizzying pace. The significance of this work was recognized in 2017 by the Nobel Prize Committee who awarded three American scientists the Nobel Prize in Medicine for their discoveries of how internal clocks regulate human biology.

Over the course of this semester, we will explore the molecular nature of the circadian clocks, the locations of these clocks in the body, and how these clocks control physiology and brain function. We will also explore current findings on the roles that circadian clocks play in sleep, psychiatric, and neurodegenerative disorders and how the benefits of therapeutic treatments for many disorders may be maximized if their delivery is synchronized to the patient’s circadian clocks.

**Course Director/Instructor:**

Susan Semple-Rowland, PhD  
Professor Neuroscience  
Director Biomedical Neuroscience Certificate Program  
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rowland@ufl.edu

**Course Format:** Online
**Course Content:**
All course content (lectures, videos, readings, quizzes, and assignments) will be delivered and accessed by students using the Canvas course platform. The material in the course is divided into the following Modules and will cover the topics indicated.

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Readings will come from the current research literature and online resources. No textbook is required.

**Grading Policy:**
The final grade for the course will be based on the student’s performance on weekly quizzes, tests, and assignments (short essays on specific questions in each topic area).

- Quizzes – 20%
- Tests – 40%
- Assignments – 40%