<table>
<thead>
<tr>
<th>Course Title</th>
<th><strong>Neurophysiology and the Senses</strong></th>
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<tbody>
<tr>
<td>Course Code</td>
<td>ECE 471</td>
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<tr>
<td>Course Type</td>
<td>Elective</td>
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<tr>
<td>Level</td>
<td>Undergraduate</td>
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<tr>
<td>Year / Semester</td>
<td>4th Year/ 1st Semester</td>
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<tr>
<td>Teacher’s Name</td>
<td>Constantinos Pitris</td>
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<tr>
<td>ECTS</td>
<td>6</td>
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<tr>
<td>Lectures / week</td>
<td>2 x 1.5 hours (lectures) + 2 hour (tutorial) per week</td>
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<tr>
<td>Laboratories / week</td>
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**Course Purpose and Objectives**

The course aims to cover the basics of the functions of the human nervous system and the senses:

- The molecular and cellular mechanisms of the excitable cells of the nervous system.
- The creation, propagation and processing of nervous system signals and their integration into system-wide decisions.
- The functioning of the various sensory systems, including vision, hearing, touch, taste, smell.
- Motor functioning and integration.
- The autonomic nervous system and the chemical control of behavior and emotions.
- Higher functions such as language, learning, and mental illness.

**Learning Outcomes**

Upon successful completion of the course, the students will have an in-depth knowledge of:

- The cellular and molecular functions of the nervous system.
- The creation, processing and integration of signals from the nervous system.
- The operation of various sensory systems such as vision, hearing, touch, taste, smell.
- The functioning of the superior functions of the brain and how these are affected in the case of mental illness.
- The development of the nervous system and how it changes from the processes of memory and learning.

This knowledge will allow them to:

- Recognize and analyze the data that results from neurophysiology problems.
- Select the appropriate methods and tools and adapt them to solve the above problems.
- Use the human nervous system as a model and for the development of new methods and technologies.
- Build on the basis provided with the help of scientific literature.
### Prerequisites

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### Course Content

- Principles of neurophysiology, the function of the senses and higher brain functions.
- Physiology of excitable cells with emphasis on cellular mechanisms, synaptic communication, signal processing, and sensory and motor systems interaction.
- The physiological basis of basic motives, emotions, language, mental illness, etc.
- Modeling with computers as well as experimental work.

### Teaching Methodology

- Lectures
- Homework assignments
- Simulation and experimental assignments

### Bibliography


### Assessment

- Midterm examination
- Final Examination
- Homework assignments
- Simulation and experimental assignments

### Language

- Greek