

**Course title:** *Sensors*

<b>Course code</b>	<b>Course status</b>	<b>Semester</b>	<b>Number of ECTS credits</b>	<b>Lecture hours</b>
<b>PA1205</b>	<b>Elective</b>	<b>II</b>	<b>5</b>	<b>3+1</b>

**Study program:**

Graduate academic studies, ELECTRICAL ENGINEERING, study program: Electronics, Telecommunications and Computer engineering (studies last for 4 semesters, 120 ECTS credits).

**Prerequisites:**

No prerequisites required.

**Course aims:**

Students will be introduced with the principles of sensors for measuring of non-electrical quantities.

**Teacher(s) first and last names:** *Prof. dr. Rada Dragović Ivanović*

**Studying method:**

Lectures, exercises, laboratory exercises, individual work on practical tasks, consultations.

**Course synopsis:**

Preliminary week	Preparation and semester enrolment.
I week	Introduction;
II week	Dinamic characteristics of measuring converters. Correction. Experimental determination;
III week	Length measuring using interferometer;
IV week	Digital converters for angular bias measurements. Optoelektron. converters angular speed measurement;
V week	Silicon-integrated akceleromeeters. Converters for pressure measurements;
VI week	<b>I colloquium</b>
VII week	Laser Doppler anemometer.
VIII week	Sensors. Silicon-resistance based temperature sensors;
IX week	Linearized termometers. Radiational termometers;
X week	Sensors for heat emittion. Piro-electrical sensors;
XI week	Semiconducting sensors for magnetic induction.
XII week	<b>II colloquium;</b>
XIII week	<b>free week;</b>
XIV week	Fiberoptical sensors for non-electrical quantities;
XV week	Automated measuring systems.
XVI week	Final exam
Final week	Administrative procedures.
	Additional lessons, correction of the final exam and administrative procedures.

**STUDENT WORKLOAD**

<u>per week</u>	<u>per semester</u>
<p><b>5 credits x 40/30 = 6 h and 40 min</b></p> <p><b>Working hours structure:</b></p> <ul style="list-style-type: none"> <li>3 h for lecturtes</li> <li>1 h for exercises</li> <li>2 h and 40 min for individual work, including consultations</li> </ul>	<p><b>Teaching and the final exam:</b> (6 h 40 min) x 16 = <b>106 h 40 min</b></p> <p><b>Necessary preparation</b> (before semester): 2 x (6hi i 40 min) = <b>13 h and 20 min</b></p> <p><b>Total work hours for the course: 5x30 = 150 h</b></p> <p><b>Additional hours</b> for preparing correction of the final exam, including the exam taking: up to <b>30hours</b>.</p> <p><b>Work hours structure:</b></p> <p>106 h and 40 min. (Lectures)+13 h and 20 min. (Preparation)+30 h (additiona work)</p>

Lessons attendance is mandatory for students, as well as doing exercises and colloquiums, etc.

**Literature:**

Dragan Stanković "Fizičko-tehnička mjerenja - Senzori" Beograd 1997.

**The forms of knowledge testing and grading:**

- 2 colloquiums - 25 points each,
- Final exam 50 points.
- Student gets the passing grade by collecting **51** points at least.

**Special remarks for the course :**

**Teacher(s) who provided the information:** *Prof. dr. Rada Dragović Ivanović*