

DESCRIPTION OF THE COURSES

- Course code: **ELR2207**
- Course title: **Optoelectronics**
- Language of the lecturer: **polish**, english

<i>Course form</i>	<i>Lecture</i>	<i>Classes</i>	<i>Laboratory</i>	<i>Project</i>	<i>Seminar</i>
<i>Number of hours/week*</i>	1				1
<i>Number of hours/semester*</i>	15				15
<i>Form of the course completion</i>	Quiz				Completion
<i>ECTS credits</i>	1				1
<i>Total Student's Workload</i>	30				30

- Level of the course (basic/advanced): **advanced**
- Prerequisites: **Courses in Applied Physics, Electronics, Electromagnetic Theory**
- Name, first name and degree of the lecturer/supervisor: **Prof. Bogdan Miedziński, Ph.D., D.Sc.**
- Names, first names and degrees of the team's members: **Grzegorz Wiśniewski, Ph.D.**
- Year:..... ?..... Semester:..... ?.....
- Type of the course (obligatory/optional): **obligatory**
- Aims of the course (effects of the course): **Course intended to acquaint students with modern concept of optical signal processing and transmission**
- Form of the teaching (traditional/e-learning): **traditional**
- Course description: **Principle of transformation and processing of the light signals, problems of losses in fibre guides and dispersion. Measurement of basic fibre parameters. Optical phenomena used for optical sensing .Communication networks and their structure. Applicability of fibre optics in automated electric power systems.**
- Lecture:

<i>Particular lectures contents</i>	<i>Number of hours</i>
1. Introduction, programm, requirements	1
2. Signal transmission in optical string and related problems	2
3. Dispersion and ways of its reduction	1
4. Structure of a communication path-multiplexing	2
5. Passiv elements and their applicability	2
6. Measurement of fiber parameters	2
7. Phenomena applied in optical sensing	2
8. Application of optical fiber communication in electric power systems	2
9. Quiz	1

- Classes – the contents:
- Seminars – the contents:

- **advanced fibre optics technology**
 - **advanced fibre conductors and their parameters**
 - **advanced basic and remote optics sensors**
 - **applicability of fibre sensors in practice**
 - Laboratory – the contents:
 - Project – the contents:
 - Basic literature:
 - **J.G. Palais: Zarys telekomunikacji światłowodowej WKL, Warszawa 1991**
 - **J.G. Midwinter, Y.L. Guo: Optoelektronika i technika światłowodowa, WKL Warszawa 1995**
 - Additional literature
 - **Chai Yeh: Handbook of Fiber Optics-Theory and Applications, Academic Press London 1990**
 - **Papers in professional press:**
 - Conditions of the course acceptance/creditation: **Passing grade of quiz and completion of seminars**
- * - depending on a system of studies