Course title:	Telecommunication networks			
Course code	**Course status**	**Semester**	**Number of ECTS credits**	**Lecture hours**
PA3104	Mandatory	I	6	3L+1E

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 basic principles of telecommunication networks, the most important tehnologies of telecommunication networks, while the special attention will be given to the theory of telecommunication traffic.

Teacher(s) first and last names: ***Doc.dr Igor Radusinović (predavanja i vježbe)***

Studying method:
Lectures, exercises, consultations.

Course synopsis

Preliminary week	Preparation and semester enrolment.
I week	Introduction in telecommunication networks.
II week	Telephone telecommunication networks
III week	integrated telecommunication networks
IV week	Introduction in IP telecommunication networks. IP addressing and routing. Transport level.
V week	MPLS. GMPLS. The next generation networks
VI week	I colloquium
VII week	Free week
VIII week	Overview of the probability theory used intelecommunication networks.
IX week	Queueing and stochastic processes. Poason incoming process. Markov chains. Litl theorem
X week	M/M/1, M/M/1/K, M/M/S/S, M/M/∞, delay in FIFO queue. Erlang distribution.
XI week	M/G/1
XII week	II colloquium
XIII week	Analysis of local computer networks
XIV week	Queueing network
XV week	Seminar work
XVI week	*Final exam*
Final week	Administrative procedures.
XVIII-XXI week	Additional lessons, correction of the final exam and administrative procedures.

STUDENT WORKLOAD

per week	per semester
Working hours: 6 credits x **40/30 = 8** hours.	**Teaching and the final exam**: (**8**hours) x **16 = 128**ours.
Working hours structure:	**Necessary preparation** (before semester)**: 2** x (8hours) **= 16**hours.
3 hours for teaching	**Total work hours for the course**: **176**hours
1 hour for exercises	**Additional hours** for preparing correction of the final exam, including the exam taking: up to **36**hours.
4 hours for individual work, including consultations.	**Work hours structure**:
	128hours (lectures) + 16hours (preparation) + 36hours (additional work)

Lessons attendance is mandatory for students, as well as doing home and seminar works, etc.

Literature: Basic: I.Radusinović, "Telecommunication network", in preparation.
Additional: G.Giambene, „Queueing theory and telecommunications“, Springer, 2005

The forms of knowledge testing and grading:
- Home exercises carry 10x2 points (20 point in total)
- Each colloquium carries 15 points (30 points in total)
- Seminar work 20 points
- Final exam 30 points.
- Seminar work carries 40 points

Student gets the passing grade by collecting **51** points at least.

Special remarks for the course : If needed, the course can also be taught in English.

Teacher(s) who provided the information: Doc.dr Igor Radusinović

Note: