STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Network Operating Systems		**1011102311011160851**

Field of study	Profile of study (general academic, practical)	Year /Semester
Engineering Management - Full-time studies -	**(brak)**	**1 / 1**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
Production and Operations Management	**Polish**	**elective**

Cycle of study:	Form of study (full-time,part-time)
Second-cycle studies	**full-time**

No. of hours				No. of credits
Lecture: **15**	Classes: **15**	Laboratory: **-**	Project/seminars: **-**	**2**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
(brak)	**(brak)**

Education areas and fields of science and art	ECTS distribution (number and %)
technical sciences	**2 100%**

Responsible for subject / lecturer:

dr Ryszard Danecki
email: Ryszard.Danecki@put.poznan.pl
tel. (+4861)6653388
Faculty of Engineering Management
Strzelecka Str. 11, 60-965 Poznań

Responsible for subject / lecturer:

dr inż. Zbigniew Włodarczak
email: Zbigniew.Wlodarczak@put.poznan.pl
tel. (+4861) 665 33 87
Faculty of Engineering Management
Strzelecka Str. 11, 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	First cycle study courses on computer science and information technology.
2	**Skills**	Experience in runnuing applications and file management in MS Windows.
3	**Social competencies**	Interest in understanding computer technologies.

Assumptions and objectives of the course:

-The purpose of this course is to give understanding of operating systems as the most advanced computer software. Students should know the main challenges in operating systems design and the ideas behind solutions. The emphasis is on network architecture and the impact of the Internet and mobile computing on operating systems design.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. The students should know the structure and the main tasks of operating systems layers and tools. - [K2A_W08]
2. Students should describe the evolution of operating systems and the influence of the development of computer networks. - [K2A_W09]
3. They should be familiar with typical elements of user interfaces, tools and cofiguration tasks in operating systems. - [K2A_W08]
4. Students should have some understending how Application Programmers Interfaces (API-s) facilitate software development and how this is related to operating systems. - [K2A_W17]

Skills:

1. Student should be able to do typical network configuration tasks in Windows and Linux operating systems. - [K2A_U06]
2. They should plan and set users accounts and access rights and formulate security policy. - [K2A_U06]
3. They should be able to prepare examples of programs that work in different operating environments. - [K2A_U06]

Social competencies:

1. Students should be aware of responsible use and configuration of file systems and other computer systems resources. - [K2A_K05 K2A_K06]

Assessment methods of study outcomes

-Practical tests in laboratories.

Presentations on key topics.

Course description

-Lectures:

The layers and tasks of operating systems. Short explanation of terms: process management (processes, threads, CPU scheduling, synchronization, and deadlock), memory management (segmentation, paging, swapping), file system. The network architecture of Windows and Unix/Linux. The Application Programmers Interface for network operation - simple examples. Graphical User Interfaces and the impact of the Internet and Web Applications. Virtual computing environment and cloud computing.

-Laboratories:

Depending on students experience laboratory exercises provide more or less advanced illustrative material to lecture subjects. This may include: configuring Windows and Linux users access rights, FTP and HTTP servers, simple shell scripting.

Basic bibliography:

1. A. Silberschatz, P. B. Galvin, Operating Systems
2. W. Stallings, Introduction to Operating Systems

Additional bibliography:

1. Web pages on virtual and cloud computing

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	15
2. Attendance and active participation in laboratory exercises	15
3. Preparation for the final credits	15
4. Home assignments	5

Student's workload

Source of workload	hours	ECTS
Total workload	50	2
Contact hours	30	1
Practical activities	15	1