

Subject:		<b>DATA COMMUNICATIONS SYSTEMS</b>						
Maritime University of Szczecin Faculty of Navigation								
Field of study				NAVIGATION				
Mode of studies				full-time				
GENERAL SCHEDULE								
Semester	Weeks In semester	Hours per week			Hours in semester			ECTS
		A	C	L	A	C	L	
I	15	1		2	15		30	5
II	15							
III	10							

### Objectives

Upon completion of their studies, the graduating student should:

**Know** → basic problems related with configuration and maintenance of network operating system, basic problems of configuration, and administration of computer networks, standards of data coding, compression and transmission, types of data information systems, data communications systems in modern navigation.

**Be able to** → configure and maintain of a network operating system, computer networks and basic industrial networks.

### Syllabus

SEMESTER I	DATA COMMUNICATIONS SYSTEMS	LECTURES	15 HOURS
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- Types and characteristics of computer systems.
- Representation of information, coding and compression.
- Computer networks.
- Resources and flow of information.
- Means and standards of information communication.
- Use of data information technology in navigation. Examples.

SEMESTER I	DATA COMMUNICATIONS SYSTEMS	LAB CLASSES	30 HOURS
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- Network operating system – configuration and maintenance.
- Computer networks design.
- Industrial networks.
- Data transmission techniques

### Basic literature

1. Silberschatz A., Galvin P.B., Gagne G.: *Operating System Concepts*, John Wiley & Sons, Inc., 2004
2. Odom W., Knott T.: *Networking Basics CCNA 1 Companion Guide (Cisco Networking Academy)*, Cisco Press, 2006
3. Mahalik N.P. (ed) *Fieldbus Technology: Industrial Network Standards for Real-Time Distributed Control*, Springer, London, 2003
4. Haykin S., *Communication Systems*, John Wiley & Sons, 2000

**Additional literature**

1. Haugdaht J., *Network Analysis and Troubleshooting*, Addison-Wesley Professional, 2000
2. Schetina E., Green K., Carlson J., *Internet Site Security*, Macmillan Computer Pub, 2002
3. Mackay S. (ed) *Practical Industrial Data Networks: Design, Installation and Troubleshooting*, Newnes, Edinburgh, 2004
4. Gibson J., *The Communications Handbook 2nd ed.*, CRC PRESS, 2002
5. B.P. Lathi, *Communication Systems*, John Wiley & Sons Inc, 1968
6. Gregg W., *Analog and Digital Communication*, Wiley, 1977
7. Sommerville I., *Software engineering*, Pearson Education Limited, 2001