COURSE DESCRIPTION CARD - SYLLABUS

Course name
Stage technology [N1Eltech2>PO12-TS]

Course

Field of study
Electrical Engineering

Year/Semester
5/9

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
part-time

Requirements
elective

Number of hours

Lecture
10

Laboratory classes
10

Other
0

Tutorials
0

Projects/seminars
10

Number of credit points

4,00

Coordinators

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Lecturers

Prerequisites

Student starting this item should have basic knowledge of physics, optics, electrical engineering, electronics, optoelectronics, metrology, lighting technology, lighting equipment, and lighting design. They should also possess the ability to effectively obtain information from designated sources and demonstrate a willingness to collaborate within a team.

Course objective

Providing students with basic knowledge of stage technology, including lighting, multimedia, electroacoustics, and mechanics useful in the design process and application in theatres, television and film studios, as well as in spaces and facilities used for shows, concerts, and other artistic events.

Course-related learning outcomes

Knowledge:
The student:
- has knowledge of the construction of stage technology devices,
- has knowledge of the structure of lighting, audiovisual, and other systems and components, their integration and control,

- has knowledge of interfaces and device control systems,
- has knowledge of the operation and reliability of stage equipment,
- has knowledge of stage technology devices infrastructure base design.

Skills:
The student:
- has the ability to recognize and identify the functionality of stage infrastructure elements: lighting, sound, multimedia, and others.
- has the ability to correctly connect components of electrical, lighting, multimedia, electroacoustic, and mechanical systems.
- has the ability to diagnose the proper operation of stage technology systems.
- has the basic programming skills for simple audiovisual and lighting systems.

Social competences:
The student appreciates the opportunities offered by applying knowledge and skills to solve technical problems. They are able to think and act entrepreneurially in the field of stage technology. They are aware of maintaining the safety of people and objects within the operating area of stage technology equipment.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

1. Lecture:
Lecture content is assessed during an approximately 45-minute written exam covering the presented content. It consists of approximately 25-30 questions (test, calculation, and problem-solving questions) with varying marks, with a pass mark of 50%. Individual activity in class and outside of class is also assessed through evaluation of homework assignments.
2. Laboratory:
- Tests and rewards for knowledge required to complete the assigned laboratory tasks,
- Assessment of knowledge and skills related to the implementation of the specified tasks, and evaluation of the report on the completed exercise.
- Earning additional points for activity during the classes, the thoroughness and aesthetics of the report, and unconventional, non-standard solutions to the tasks.
3. Project
- Assessment of knowledge and skills related to the implementation of the selected project task,
- Checking the progress of subsequent stages of the project,
- Presentation and discussion of the project within the group.

Programme content

Familiarization with the basic stage devices and systems used during the production of theatr performance, television programs and films, and other artistic shows.

Course topics

Lecture
The lecture covers: the structure of stage systems, the design and functionalities of basic and specialized lighting fixtures and multimedia devices, systems and interfaces for controlling stage lighting and multimedia, aspects of operating and servicing lighting and multimedia devices, basic electroacoustic systems, and the basics of designing installations in facilities such as theaters, stages, television studios, and film sets.
Laboratory
Includes testing and research of stage technology components such as:
- PC, Fresnel, and profile theatrical fixtures and fixtures, floodlights, smoke generators, and other applied effects,
- stage equipment: moving heads, scanners, and other moving solutions,
- interface controllers such as DMX, RDM, and ARTNET SACEN,
- multimedia recording and display devices,
- configuration of control system components,
- integration of a simple lighting system with an electroacoustic system.

The project consists of two parts:
The first part will present the design software needed to complete the selected task.
The second part will be devoted to completing a selected individual task, including programming a simple lighting system integrated with music or audiovisual material. Preparation of technical documentation for the developed show.

Teaching methods

1. Lecture: Multimedia presentation (including drawings, photos, and videos). Selected diagrams and sample calculations, selection of system device parameters, structures, and processes discussed on the board. Presentation of sample components of stage lighting fixtures, multimedia devices, smoke machines, and other effects used on stage, controllers, control cables, and power cables.
2. Laboratory exercises: team work and experiments involving the connection of the system, start-up, configuration and simple programming, carrying out measurements of the indicated quantities, preparation of a report.
3. Projects: Working with stage lighting design software, basic programming of lighting and multimedia devices. Testing the operation of the devices used in the projects through computer simulation.

Bibliography

Basic:
1. R. E. Dunham, Set Lighting Technician's Handbook, Film Lighting Equipment, Practice, and Electrical Distribution, Taylor & Francis, 2018.
2. R. Cadena, Automated Lighting, The Art and Science of Moving and Color-Changing Lights, Taylor & Francis, 2017.
3. https://muzykaitechnologia.pl/
4. http://www.lightingandsoundamerica.com/

Additional:
1. R. Pilbrow, Stage Lighting Design The Art, the Craft, the Life, Nick Hern Books, 2008.
2. https://light-howto.weebly.com/.

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	32	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	68	2,50