

1.3. Module/ course form

To be completed by Course Team	Module name : Steel structure I					Module code: C.10	
	Course name: Steel structure I					Course code:	
	Faculty: INSTITUTE OF TECHNOLOGY						
	Field of study: STRUCTURAL ENGINEERING						
	Mode of study : STATIONARY		Learning profile: PRACTICAL			Speciality: Polish with consultation in English	
	Year/ semester: 3/5		Module/ course status: COMPULSORY			Module/ course language: POLISH	
	Type of classes	lecture	lessons	lab	project	tutorial	other (please specify)
	Course load	30	-	30	15	-	-

Module/ course coordinator	Zenon Drabowicz
Lecturer	Zenon Drabowicz
Module/ course objectives	The aim of the course is to familiarize students with the basic knowledge and the acquisition of basic skills in the principles of shaping and dimensioning steel structural elements and their connections, as well as in the field of simple construction steel construction.
Entry requirements	

LEARNING OUTCOME		
Nr	LEARNING OUTCOME DESCRIPTION On completion of the course students will be able to:	Learning outcome reference
01	He has expertise in setting charges. He knows the basics of dimensioning and construction elements of metal structures.	K_W05
02	He knows the principles of design and analysis of selected buildings with metal frames.	K_W07
03	He knows basic standards, regulations and design guidelines for buildings of steel and its basic elements.	K_U07
04	Able to analyze the basic building structures of steel, political systems and supporting basic elements of structural systems.	K_U01
05	Can design selected elements and simple structures made of structural steel	K_U07
06	He can use the basic standards, regulations and design guidelines objects and their components made of steel	K_U17

07	He can assess the sustainability of a building and taken into account when designing its environmental impacts and fire safety.	K_U18
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CURRICULUM CONTENTS	
Lecture	
Introduction to lectures. The history of metal structures. Materials and metallurgical products. Processes for producing steel. The structure of metals. Internal stresses. Genera, species and properties of metals. The selection of steel construction. Corrosion of steel and corrosion protection. Metal structures exposed to fire and anti-fire security. Basics of dimensioning of steel structures. The rules idealization of geometry, loads and structural behavior under load. Outline of reliability theory. Failure of the structure. Load capacity and dimensions of the axial compression and tension. Columns simple and complex. Connections in steel structures. Welded joints.	
Tutorial	
Illustration welding techniques, strength tests of steel and component connections. The project axially compressed column of steel. The overall scope of the project includes: schematic design, structural calculations, construction drawings.	

Basic literature	<ol style="list-style-type: none"> 1. Simoes da Silva L., Simoes R., Gervasio H.: "Design of steel structures". Eurocode 3: Design of steel structures. Part 1-1: General rules and rules for buildings. Ernst & Sohn. A Wiley Company. ECCS 2010. <p><u>Normy:</u></p> <ol style="list-style-type: none"> 1. PN-EN 1990 Eurokod – Podstawy projektowania konstrukcji. 2. PN-EN 1991 Eurokod 1 – Oddziaływania na konstrukcje: <ul style="list-style-type: none"> • PN-EN 1991-1 Oddziaływania ogólne. Ciężar objętościowy, ciężar własny, obciążenia użytkowe w budynkach. 3. PN-EN 1993 Eurokod 3 – Projektowanie konstrukcji stalowych: <ul style="list-style-type: none"> • PN-EN 1993-1-1 Projektowanie konstrukcji stalowych. Reguły ogólne i reguły dla budynków. • PN-EN 1993-1-8 Projektowanie konstrukcji stalowych. Projektowanie węzłów.
Additional literature	

Teaching methods	Lecture with interactive presentation, laboratories, calculation tasks, design assignments, individual and group laboratory work, individual consultations with the lecturer	
	Assessment method	Learning outcome number
Test		01, 02
Defense project and its verification		03, 04, 05, 06
Form and terms of exam	<p>The prerequisite is:</p> <ul style="list-style-type: none"> - Lectures and design classes: active presence in all classes, credit design classes based on the defense of the executed project and passing the test. - Laboratory: completion of all exercises. 	

STUDENT WORKLOAD	
	Number of hours
Participation in lectures	30
Independent study of lecture topics	
Participation in tutorials, labs, projects and seminars	30
Independent preparation for tutorials*	5
Preparation of projects/essays/etc.*	25
Preparation/ independent study for exams	5
Participation during consultation hours	5
Other	
TOTAL student workload in hours	100
Number of ECTS credit per course unit	4
Number of ECTS credit associated with practical classes	2,4
Number of ECTS for classes that require direct participation of professors	2,6