KOLEGJI - COLLEGE BIZNESI Prishtinë

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PLANPROGRAMI MËSIMOR - SYLLABUS

Level of study		Bachelor	Department	Emergency Management		Academic year	**2020-21**
Title of subject		**Systems Under Pressure**					
Year	I	Status of subject	Obligatory	ECTS value			**6**
Semester	I						
Teaching weeks		15		Number of hours per week	Lectures	Exercises	
					3	1	
The teaching method		Lectures, exercises, papers, consultations, tests, case studies, assignments, exercises, etc.					
Consultations		Two hours after the lectures					
Teacher of the subject		**Dr. Sc. Xhevat Berisha**		Tel/mob	+383 44 192 949		
				e-mail	xhevat.berisha@uni-pr.edu		
Assistant of the subject				Tel/mob			
				e-mail			

Study purpose and course content	Student benefits
Qëllimi i kësaj lënde është që studentët të marrin njohuritë themelore për mundësitë e shfrytëzimit të sistemeve nwn shtypje si pajisje në inxhinieri. T'i njohë dhe t'i kuptojë sistemet nën shtypje, të aftësohet për njohjen e rrezikshmërisë që ato paraqesin gjatë operimit joprofesional të tyre. Të familjarizohet me metodologjinë e llogaritjes së sistemeve nën shtypje dhe t'i njoh materialet për fabrikimin e sistemeve nën shtypje si dhe metodat për disajnimin e tyre.	**Knowledge:** - Understand the basic concepts for printing equipment and vessels as an integral part of printing systems. - Ability to calculate the constituent elements of systems under pressure. - To analyze the basic concepts for emergency management during the process of using systems under pressure. **Skills:** - Communication and presentation skills, - Teamwork skills, - To be trained in the development of independent engineering studies in the field of compression systems.

METHODOLOGY FOR REALIZING TEACHING THEME

Introducing PowerPoint teaching topic, large-scale exercises.
Repetition of the preliminary topic by the assigned group of students, analysis, research and individual and team exercises.
Case study or assignment (for exercises) related to the lectured topic.

CONDITIONS FOR REALIZING THE TEACHING THEME

The teaching room is equipped with a computer and projector, tables for lectures and exercises on energy conversion tasks.

Method of student evaluation (in %):		
- Presentation and group work: 0-4%	Rating in%	Rating in%

- Individual Presentation: 0-3% - Activity: 0-3% - Workshop: 0-10% - Test I: 0-15% - Test II: 0-15% - Final exam: 0-50%	91-100	10 (ten)
	81-90	9 (nine)
	71-80	8 (eight)
	61-70	7 (seven)
	51-60	6 (six)

STUDENT OBLIGATIONS	
Lectures	Exercises
- Attending lectures, - Active participation, - Seminar papers, projects, - Participation in tests and exercises, - Final exam.	- Participation in exercises, - Individual and group work in case studies, - Participation discussions.

CONTRIBUTION IN THE LOAD OF STUDENT			
Activity	**Hours**	**Days**	**Weeks**
Lectures	2	15	30
Exercises Theoretical /Laboratory	2	15	30
Practical work	2	10	20
Contacts with teacher/consultations	1	10	10
Practice in field	-	-	-
Testing's, seminars	5	2	10
Homework	1	15	15
Time of self-study of student	1	15	15
Final preparation for exam	10	1	10
Time spent in evaluation (tests, questionnaire, final exam)	2	3	6
Projects proposals	2	2	4
Note: 1 ECTS credit = 25 hours commitment, e.g. if the course has 6 ECTS credits the student must have a commitment of 150 hours per semester		Total:	**150**

Week	**Lectures**		**Exercises**	
	Themes	Hours	Themes	Hours
1	**Week one:** Condition sizes and physical properties of working fluids. Introduction. Condition sizes. physical properties of working fluids. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 5 - 22.	2	Exercises - Repeating the content of the main topics from the introductory lecture.	2
2	**Week Two:** Overview of pressure vessels. Introduction. Developments of standards for the construction of pressure vessels. Construction rules for pressure vessels and vessels. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 24 - 39.	2	Exercises - Standards for building pressure vessels. Construction rules for pressure vessels and vessels.	2
3	**Week Three:** Division into types according to the physical-geometric characteristics of the pressure vessel. Class determination, calculation and type and class of pressure vessel according to EN M.E2.150 and EN2.151. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 40 - 50.	2	Exercises - Physical-Geometrical Characteristics of Pressurized Task Task: Determine the class, calculation and type and class of pressure vessel according to standards.	2

4	**Week four:** Design philosophy of pressure vessels. Overview. Structural and material considerations. Safety factor. Calculation by rules and calculation by reviews. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 51 - 64.	2	Exercises - Structurally and Material Considerations. Safety factor. Task: Calculate by rules and by reviews.	2
5	**Week five:** Classification and control of pressure equipment. Obligations of the owner or user of pressure equipment. Control of pressure equipment. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 64- 74.	2	Exercises - Classification and control of pressure equipment. Task: Checking pressure equipment.	2
6	**Week Six:** First check of high-risk pressure equipment. Safety elements and evidence of pressure equipment. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 71 - 78.	2	Exercises - Task: Control high-pressure equipment. Safety elements and evidence of pressure equipment.	2
7	**The first test** **Week Seven:** Measuring Instruments for Under Pressure Systems. Introduction. Importance of measurements and measuring instruments. Fundamentals of error theory. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 79 - 89.	2	Exercises and tasks: The importance of measurements and measuring instruments. Fundamentals of error theory.	2
8	**Week Eight:** Classification of temperature measuring instruments and area of use. Floating working gas thermometers, gas, liquid glass, manometric. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 90 - 100.	2	Exercises and Tasks: Thermometers with swollen, gas-fired, liquid glass thermometers.	2
9	**Week 9:** Temperature Measuring Instruments. Pyrometers. Special tools for measuring temperature. Installation of thermometer and pyrometer sensor. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 100 - 119.	2	Exercises: Task: Pyrometers. Special tools for measuring temperature. Installation of thermometer and pyrometer sensor.	2
10	**Week 10:** Pressure Measuring Instruments. Manometers with "U" shaped tubes and with expanded container tubes. Two-fluid tubular manometers. Manometer placement and calibration. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 119 - 132.	2	Exercises: U-shaped tube manometers and enlarged container tubes. Two-fluid tubular manometers. Manometer placement and calibration.	2
11	**Eleventh Week:** Barometers. Types of flow measurement instruments. Volumetric methods. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 132 - 144.	2	Exercises and tasks: Types of flow measurement instruments. Volumetric methods.	2
12	**Week twelve**: Measurement of flow based on forces acting on the body involved by the current. Thermal-based flow measurement. Magneto-inductive flow measurement with ultrasound and laser. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 144 - 151.	2	Exercises and tasks: Flow measurement. Thermal-based flow measurement. Magneto-inductive flow measurement. Ultrasound and laser flow measurement.	2
13	**Week thirteen:** Testing pressure systems. Methods of evidence destruction and non-destruction. Visual inspection and dimension measurement. Penetration testing. Radiographic examination. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 152 - 161.	2	Exercises: Testing vessels and pressure equipment. Methods of evidence.	2
14	**The second test** **Week fourteen:** Ultrasound thickness testing and measurement. Pressure testing. Shutter. Fillet connections.	2	Exercises: Ultrasound thickness testing and measurement. Pressure testing. Material	2

	Threaded flange. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 162 - 170.		systems and printing. Threaded flange.	
15	**Week Fifteen:** Errors in the Production of Pressed Vessels. Physical Injuries. Welding failures. Note errors. Deviation from drawing. **"Sistemet nën Shtypje"**: Xh. Berisha, 2020, pp 171 - 180.	2	Exercises and Tasks: Errors in the Production of Pressed Vessels. Physical Injuries. Welding failures. Note errors. Deviation from drawing.	2

LITERATURE

Basic literature:

1. Xhevat Berisha: **"Systems Under Pressure"** ("Sistemet nën Shtypje"), BIZNESI College Prishtina (Authorized Lectures), 2020.
2. Mustafë Muhaxheri: "Enët nën shtypje", Fakulteti i Inxhinierisë Mekanike, Prishtinë, 2017.
3. Manuali i përdorimit të softuerit, INTERGRAPH Process, Power & Marine Visual Vessel Design, 2016.

Additional literature:

1. Moss,D.: Pressure Vessel Design Manual, Third Edition, Gulf Professional Publishing, 2000.
2. Megyesy,A.E.: Pressure vessel Handbook, Tenth Edition, Pressure Vessel Publishing, Tulsa, 2003.
3. Annaratone,D.,: Pressure Vessel Design, Springer-Verlag Berlin Heidelberg, 2007.

REMARK

For each subject, students will be provided with literature and materials needed in Albanian.
At the end of each class, certain groups of students will be engaged in a task or case study on the subject taught.
The results achieved by that task, the student groups should present and discuss in the class.

STUDENT REMARKS

- First of all, the student must be aware of and respect the institution and the school rules;
- Must respect the schedule of lectures, exercises, and seminars, be attentive to the classroom;
- Possession and presentation of the identification document in tests and exams;
- When designing seminar papers, the student must adhere to the instructions given by the teacher for conducting research and technical work;
- Tests and exams are assessed individually for each student. Therefore, students should focus only on personal knowledge.
- Eventual violation of these ethical principles (rules) is punished in accordance with the norms provided by law.

Course Professor:

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Prof. Dr. Xhevat Berisha