SYLLABUS

1. Course title:

Storage and inventory management

2. Code:

3. Cycle of study:

I

4. ECTS credits:

3

5. Type of course:

Elective

6. Prerequisites:

No prerequisites

7. Class restrictions:

None

8. Duration / semester(s):

I VI

9. Weekly contact hours and student workload:

	Semester (1)	Semester (2)	(for two-semester courses)	Workload: (hours)	
9.1. Lectures	2			Classes:	33,75
9.2. Seminars	1			Individual work:	56,04
9.3. Laboratory / Practice classes	0			In total:	89,79

10. Faculty:

Faculty of Mechanical Engineering Tuzla

11. Department/study program:

Production Engineering / Production Engineering

12. Lecturer:

Alan Topčić PhD, Full Professor

13. Course aims:

Familiarization with the fundamentals of inventory management and storage processes within production systems; Get to know the basic methods, approaches and concepts of inventory management as applied in everyday industrial practice;

Development of theoretical knowledge and practical skills related to inventory management and storage processes, including the design of warehouses in accordance with the requirements of the production system.

14. Learning outcomes:

Upon successful completion of the course, the student will be able to:
To define and categorize inventory within a production system; To apply fundamental inventory management models with the aim of enhancing the competitiveness of the production system; To identify the prerequisites for the implementation of storage processes; To analyze the influence of packaging and packing processes on storage operations; To determine and propose appropriate methods and strategies for warehousing; To design a storage facility or warehouse in accordance with the specific requirements of the production system; To utilize relevant literature.

15. Course content:

1. The concept of stock of goods/products;
2. Reasons for stock holding;
3. Classification of stocks;
4. Inventory costs;
5. Inventory management models;
6. Modern inventory management concept;
7. Basics, significance and definition of storage;
8. Storage processes; Test 1;
9. Packaging and packging processes;
10. Types of storage;
11. Storage place;
12. Schedule of storage units in the industrial storage;
13. Ways and strategies of storage units storing;
14. Storage design;
15. Choice of storage location; Test 2.

16. Learning methods:

LECTURES (PR) – Theoretical lectures using multimedia tools, along with active two-way communication between student and professor;
AUDITORIUM EXERCISES (AV) – Solving practical problems and tasks related to the subject matter, with active two-way communication between student and teaching assistant;
CONSULTATIONS – Additional sessions that allow students to clarify specific segments of the lectures/exercises with the professor or assistant after their completion.

17. Assessment methods:

PRE-EXAM OBLIGATIONS: Students are required to take two written tests from the theoretical part (PR) and two from the auditorium exercises (AV). Theoretical tests (PR) are scheduled as follows:
- **After the first third of the semester – First midterm,**
- **At the end of the semester – Second midterm.**

Auditorium exercise tests (AV) are scheduled as follows:
- **After the middle of the semester – First midterm,**
- **At the end of the semester – Second midterm.**

The tests cover the material presented up to that point in lectures and exercises. Theoretical tests (PR) consist of multiple-choice questions, short answer questions, and essay-type questions. Students can earn a maximum of 8 points per midterm — totaling 16 points for all two theoretical tests. Auditorium exercise tests (AV) consist of problems solving, and students can earn a maximum of 5 points per test — totaling 10 points. All students take the tests at the same time, ensuring uniform knowledge evaluation and consistent testing conditions.
As part of the pre-exam obligations, students are required to prepare an individual Seminar paper (PR) on a topic related to the course content. It must be submitted in written form to the course professor for review and evaluation, and then defended orally. Successfully completed and defended Seminar assignment is worth up to 7 points. Students need to prepare an individual Graphical assignment on a topic related to the course content too. It must be submitted in written form to the course assistant for review and evaluation, and then defended orally. Each successfully completed and defended Graphical assignment is worth up to 5 points.
For continuous participation during lectures and exercises throughout the semester, students may earn:
- **Up to 20 points from lectures (PR),**
- **Up to 10 points from Auditorium exercises (AV).**

The final exam is oral.
Only students who have successfully fulfilled more than 50% of the pre-exam obligations and attended more than 70% of lectures and exercises are eligible to take the final exam. In the final exam, students must answer five questions from the course material covered in lectures and exercises. The maximum score for the final exam is 30 points.
All forms of knowledge assessment are recognized as part of the cumulative grading system. To pass the course, a student must earn a minimum of 54 cumulative points.
If a student misses lectures/exercises, they are required to provide valid justification.

The condition for signing is the student's attendance at a minimum of 70% of lectures and exercises.

Grading Scale:

Grade	Descriptive	Letter	Points
5 (five)	Does not meet minimum criteria	F, FX	<54
6 (six)	Meets minimum criteria	E	54÷64
7 (seven)	Generally good, but with significant shortcomings	D	65÷74
8 (eight)	Average, with noticeable errors	C	75÷84
9 (nine)	Above average, with occasional errors	B	85÷94
10 (ten)	Exceptional success with no errors or with minor errors	A	95÷100

18. Assessment components:

The exam grade is based on the total number of points that the student earned by fulfilling pre-exam obligations and taking the exam, and contains a maximum of 100 points. It is determined according to the following scale:

- **Attendance at Lectures (PR): 20 points**
- **Theory tests (PR): 2 tests × 8 points = 16 points**
- **Seminar paper (PR): 7 points**
- **Attendence at Auditorium exercises (AV): 10 points**
- **Tests with tasks (AV): 2 tests × 6 points = 12 points**
- **Graphic work (AV): 5 points**

Prerequisites total: 70 points
Final exam: 30 points
TOTAL: 100 points

19. Mandatory reading list:

Mileusnić N. (1990) „Unutrašnji transport i skladišta“, Naučna knjiga, Beograd
Oluić Č. (1997) "Skladištenje u industriji - Rukovanje materijalom", Fakultet strojarstva i brodogradnje Sveučilišta u Zagrebu, Zagreb

20. Additional reading list:

J.W. Toomey (2012) "Inventory Management: Principles, Concepts and Techniques", Springer
P. Narayan, J.Subramanian (2009) "Inventory Management-principles and Practices"

21. Web sources:

https://www.iibms.org/pdf/e-library/essentials_of_inventory_management.pdf
https://afifnurichwan.wordpress.com/wp-content/uploads/2015/06/inventory-control-and-management-second-edition.pdf
https://babel.hathitrust.org/cgi/pt?id=mdp.39015004484427&seq=17

22. Applicable from the academic year:

2025/2026.

23. Adopted in the Faculty/Academy session:

25.04.2025.