

| UČNI NAČRT PREDMETA / COURSE SYLLABUS |                      |
|---------------------------------------|----------------------|
| <b>Predmet:</b>                       | Trajnostna mobilnost |
| <b>Course title:</b>                  | Sustainable Mobility |

| Študijski program in stopnja<br>Study programme and level                              | Študijska smer<br>Study field | Letnik<br>Academic year | Semester<br>Semester |
|----------------------------------------------------------------------------------------|-------------------------------|-------------------------|----------------------|
| Sonaravne tehnologije in sistemi v strojništvu - 3. stopnja                            | /                             | 1. / 2.                 | Zimski / letni       |
| Sustainable technologies and systems in mechanical engineering - 3 <sup>rd</sup> cycle | /                             | First / second          | Winter / summer      |

**Vrsta predmeta / Course type**

izbirni/elective

**Univerzitetna koda predmeta / University course code:** STSS IP UN11

| Predavanja<br>Lectures | Seminar<br>Seminar | Vaje<br>Tutorial | Laboratorijske vaje<br>work | Druge oblike študija | Samost. delo<br>Individ. work | ECTS |
|------------------------|--------------------|------------------|-----------------------------|----------------------|-------------------------------|------|
| 10                     | 40                 |                  |                             | /                    | 250                           | 10   |

**Nosilec predmeta / Lecturer:**

doc. dr. Aleksandar Šobot  
izr. prof. dr. Sergej Gričar

**Jeziki /  
Languages:**

**Predavanja /  
Lectures:** Slovenski / slovenian  
**Vaje / Tutorial:** Slovenski / slovenian

**Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:**

- Vpis v doktorski študijski program.

**Prerequisites:**

- Enrollment in the doctoral study program.

**Vsebina:**

- **Okoljski vidiki:**  
Trajnostni razvoj in mobilnost  
Vpliv prometa na okolje
- **Tehnično-tehnološki vidiki:**  
Mobilnost in prostor  
Sodobne tehnološke rešitve na področju mobilnosti za zmanjšanje vplivov na okolje
- **Socio-ekonomski vidiki:**  
Strategije mobilnosti EU in SLO  
CBA analiza in merjenje ogljičnega odtisa

**Content (Syllabus outline):**

- **Environmental aspects:**  
Sustainable development and mobility  
The impact of transport on the environment
- **Technical and technological aspects:**  
Mobility and space  
Modern technological solutions in the field of mobility to reduce environmental impacts
- **Socio-economic aspects:**  
EU and SLO mobility strategies  
CBA analysis and measurement of carbon footprint

## Temeljni literatura in viri / Readings:

### **Temeljna literatura / Basic literature:**

1. VIDEMŠEK, B. *Plan B: Pionirji boja s podnebno krizo in prihodnost mobilnosti*. 2020. Dostopno: UNM knjižnica.
2. ŠOBOT, A., GRİČAR, S. in BOJNEC, Š. Sustainable Commuting: Active Transport Practices and Slovenian Data Analysis. *Urban Science*, 2024, **8** (4), 214.

### **Priporočljiva literatura / Recommended literature:**

1. GRİČAR, S., BOJNEC, Š. in ŠUGAR, V. Domestic Cycling Tourism: Double Pollution, Greenhushing, and Slovenian Sustainable Travel. *Sustainability*, 2025 **17** (1), 295.
2. Rodrigue J.-P.: *The Geography of Transport Systems*, 5. izd. New York: Routledge, 2020.
3. GONZALEZ-FELIU, J., SEMET, F. in ROUTHIER, J. (ur.). *Sustainable Urban Logistics: Concepts, Methods and Information Systems*. Springer Science+Business Media, Springer-Verlag, 2014.
4. VÖCKLER, K., ECKART, P. *Mobility Design: Shaping Future Mobility Volume 1: Practice*. 2020.

## Cilji in kompetence:

- Cilj: Razumevanje pomena mobilnosti za doseganje ciljev trajnostnega razvoja. Kompetence: obvladovanje znanja o vlogi mobilnosti pri varovanju okolja.
- Cilj: Razumevanje negativnih vplivov mobilnosti na okolje. Kompetence: vpliv izpušnih plinov na okolje, ocena življenjskega cikla materialov v avtomobilski proizvodnji itd.
- Cilj: Razumevanje možnosti tehničnih rešitev za zmanjšanje vplivov na okolje pri načrtovanju prostorske mobilnosti. Kompetence: obvladovanje različnih vrst okolju prijazne mobilnosti in modalnosti.
- Cilj: Razumevanje tehnoloških in inženirskih rešitev na področju mobilnosti. Kompetence: spoznaja okolju prijaznega vpliva električnih avtomobilov, koles, pogona na vodik in dr.
- Cilj: Razumevanje mobilnostne politike v EU in Sloveniji. Kompetence: spoznavanje korakov za vključitev v odločanje na področju mobilnosti.
- Cilj: Razumevanje pomena CBA analize in merjenja ogljičnega odtisa za področje mobilnosti. Kompetence: obvladovanje procesa analize CBA in merjenje ogljičnega odtisa.

## Objectives and competences:

- Objective: Understanding the importance of mobility for achieving sustainable development goals. Competencies: mastering knowledge about the role of mobility in protecting the environment.
- Objective: Understanding the negative impacts of mobility on the environment. Competencies: the impact of exhaust gases on the environment, life cycle assessment of materials in automotive production, etc.
- Objective: Understanding the practical possibilities of technical solutions to reduce environmental impacts when planning spatial mobility. Competencies: mastering different types of environmentally friendly mobility and modalities.
- Objective: Understanding technological and engineering solutions in the field of mobility. Competencies: Understanding the environmentally friendly impact of electric cars, bicycles, hydrogen propulsion, etc.
- Objective: Understanding the crucial role of mobility policy in the EU and Slovenia. Competencies: Understanding the intricate steps for inclusion in decision-making in mobility policy.
- Objective: Understanding the importance of CBA analysis and carbon footprint measurement for mobility. Competencies: mastering the CBA analysis process and carbon footprint measurement.

**Predvideni študijski rezultati:**

- Predstavitev pomembnosti mobilnosti v trajnostnem razvoju.
- Predstavitev negativnih vplivov mobilnosti na okolje.
- Predstavitev različnih možnosti mobilnosti v prostoru.
- Prikaz okolju prijazne mobilnosti – trajnostne mobilnosti.
- Pregled osnov trenutnih politik razvoja trajnostne mobilnosti.
- Predstavitev analize CBA in merjenja ogljičnega odtisa mobilnosti v praksi.

**Intended learning outcomes:**

- Presentation of the importance of mobility in sustainable development.
- Presentation of the negative impacts of mobility on the environment.
- Presentation of different mobility options in space.
- Presentation of environmentally friendly mobility – sustainable mobility.
- Overview of the basics of current sustainable mobility development policies.
- Presentation of CBA analysis and measuring the carbon footprint of mobility in practice.

**Metode poučevanja in učenja:**

- Predavanja
- Seminar

**Learning and teaching methods:**

- Lectures
- Seminar

**Načini ocenjevanja:**

Delež (v %) /

Weight (in %)

**Assessment:**

Načini:

- temeljna ali aplikativna raziskovalna naloga z zagovorom

100 %

Ocenjevalna lestvica: ECTS (uspešno, neuspešno).

Types:

- fundamental or applicative research paper with characters defence

Grading scale: ECTS (successful, unsuccessful).