



OPIS PREDMETA / SUBJECT SPECIFICATION

<b>Predmet:</b> <b>Subject Title:</b>	Pregled tehnologij  <b>Technologies overview</b>
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Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Izobraževalna kemija Educational Chemistry	Kemija	3	zimski

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. Vaje Lab. Work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
60			15		75	5

Nosilec predmeta / Lecturer:

Jeziki / Predavanja / Lecture:   
Languages: Vaje / Tutorial:

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

Prerequisites:

Vsebina:

Contents (Syllabus outline):

- Voda kot surovina v kemijski industriji, njene lastnosti in zaščita okolja.
- Energija in goriva (fosilna ter alternativna).
- Pridobivanje in predelava premoga in nafte.
- Industrijski plini.
- Keramična industrija.
- Druge anorganske tehnologije (proizvodnja žveplove kisline, proizvodnja premazov)
- Jedrska industrija.
- Eksplozivi.
- Prehrabena industrija (pridobivanje olja in maščob, sladkorja).
- Organske tehnologije (agrokemična industrija, mila in detergents).
- Fermentacijska industrija.
- Farmacevtska industrija.
- Pregled novejših tehnologij.
- Laboratorijske vaje v povezavi s proizvodnjo nekaterih produktov.

- Water as raw material in chemical industry, its properties and environmental protection.
- Energy and fuels (fossil and alternative fuels).
- Processing of coal and oil.
- Industrial gases.
- Ceramic industries.
- Other inorganic technologies (production of sulfuric acid, production of surface-coatings).
- Nuclear industries.
- Explosives.
- Food industries (manufacture of oils and fats, sugar).
- Organic technologies (agrichemical industries, soap and detergents).
- Fermentation industries.
- Pharmaceutical industries.
- Overview of novel technologies.
- Laboratory exercises in the connection with the production of some products.

Temeljni študijski viri / Textbooks:

- Shreves Chemical Process Industries, Mcgraw Hill Book Company, New York, 1984
- Wiley-VCH (ed.), Ullmann's Biotechnology and Biochemical Engineering, 2 Volume Set, Wiley-VCH, Weinheim (Germany), 1st.edition, 2007.
- Gad, Shayne Cox (ed.), Handbook of Pharmaceutical Biotechnology and Pharmaceutical Development, Wiley-VCH, Weinheim (Germany), 1st.edition, 2007.
- P.G. Jessop, W. Leitner, Chemical Synthesis Using Supercritical Fluids, Wiley-VCH, Weinheim, 1999.

**Cilji:**

- Program obsega spoznavanje posameznih vrst tehnologij v kemijski industriji,
- študenti spoznajo poleg »klasičnih« tehnologij tudi novejšje tehnologije,
- študenti se soočijo s pomenom biotehnologije.

**Predvideni študijski rezultati:**

Znanje in razumevanje:  
Razumevanje posameznih tehnologij na osnovi komponent, kot so osnovne mehanske in termične operacije ter reakcijski sistemi.

Prenesljive/ključne spretnosti in drugi atributi:

- Vsebina predmetaja osnova za razumevanje vsebine predmeta Strokovni ogledi z varstvom okolja na drugi stopnji.

**Metode poučevanja in učenja:**

- Predavanja
- Laboratorijske vaje
- Individualno delo

**Načini ocenjevanja:**

- Laboratorijske vaje
- pisni izpit
- ustno izpraševanje

**Objectives:**

- The program comprehends some basic technologies in chemical industries,
- students comprehend among classical technologies, novel technologies, as well,
- students confront with the importance of biotechnology.

**Intended learning outcomes:**

Knowledge and Understanding:  
Understanding of technologies on the basis of compounds, such as unit operations and reaction systems.

Transferable/Key Skills and other attributes:

The subject is the basis for understanding of the subject Professional excursions with environmental protection.

**Learning and teaching methods:**

- Lectures
- Laboratory excersises
- Individual work

**Assessment:**

- laboratory work
- written examination
- oral examination

Delež (v %) /  
Weight (in %)

• Laboratorijske vaje	20 %	• laboratory work
• pisni izpit	40 %	• written examination
• ustno izpraševanje	40 %	• oral examination

**Materialni pogoji za izvedbo predmeta :**

- Predavalnica, opremljena z audiovizualnimi pripomočki
- Laboratorij

**Material conditions for subject realization**

- Lecture hall, equipped with audio-visual equipment.
- Laboratory

**Obveznosti študentov:**

(pisni, ustni izpit, naloge, projekti)

- laboratorijsko delo z zaključnim poročilom
- pisni izpit
- ustni izpit

**Students' commitments:**

(written, oral examination, coursework, projects):

- laboratory work with final report
- written examination
- oral examination