

## UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	Komercializacija tehnologij
<b>Course title:</b>	Commercialization of Technology

Študijski program in stopnja Study programme and level	Letnik Academic year	Semester Semester
Nanoznanosti in nanotehnologije, Informacijske in komunikacijske tehnologije, Ekotehnologije, Senzorske tehnologije, 3. stopnja	1	1
Nanosciences and Nanotechnologies, Information and Communication Technologies, Ecotechnologies, Sensor Technologies, 3 <sup>rd</sup> cycle	1	1

**Vrsta predmeta / Course type** Izbirni / Elective

**Univerzitetna koda predmeta / University course code:** SPL-634

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Druge oblike Other	Samost. delo Individ. work	ECTS
15	15			15	105	5

*\*Navedena porazdelitev ur velja, če je vpisanih vsaj 15 študentov. Drugače se obseg izvedbe kontaktnih ur sorazmerno zmanjša in prenese v samostojno delo. / This distribution of hours is valid if at least 15 students are enrolled. Otherwise the contact hours are linearly reduced and transferred to individual work.*

**Nosilec predmeta / Lecturer:** Prof. dr. Borut Likar, MBA

**Jeziki / Languages:** Predavanja / Lectures: Slovenščina, angleščina / Slovenian, English  
Vaje / Tutorial:

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

Izpolnjeni morajo biti pogoji za vpis na doktorski študij.

**Prerequisites:**

Student should fulfill the formal requirements for enrolling to the doctoral study program.

**Vsebina:**

- Vloga inoviranja in tehnologij v sodobni družbi
- Dizajnerski pristop pri razvoju inovativnih tržnih proizvodov
- Ustvarjalno zaznavanje raziskovalnih in tehnološki izzivov kot vir poslovnih priložnosti
- Ustvarjalni pristopi in metode pri reševanju izzivov
- Vrednotenje tehnološko-inovacijskih oz. tržnih priložnosti
- Prototipiranje in testiranje kot korak do uspešnih tržnih proizvodov
- Izdelava poslovnega načrta in projektno delo
- Komercializacija RR-a, know-how-a in tehnologij

Celotni program bo vključeval kratke primere v

**Content (Syllabus outline):**

- The role of innovation and technology in modern society
- Design thinking approach in the development of innovative commercial products
- Creative perception of R&D and technological challenges as a source of business opportunities
- Creative approaches and methods for problem solving
- Evaluation of technological-innovation and market opportunities
- Prototyping and testing as a step towards successful market products
- Development of a business plan and project work
- Commercialization of R&D, know-how and technologies

uspešnih tehnoloških podjetjih in RR organizacijah.

The entire programme shall include short examples of successful technology-oriented companies and R&D organization

### Temeljna literatura in viri / Readings:

Osnovna literatura/Basic literature:

- Zapiske s predavanj/Lecture handouts
- LIKAR, Borut in soavtorji. *Innovation management*. 1st. ed. Ljubljana: Korona plus - Institute for Innovation and Technology, 2013 (pogl/chapter: 6,7,8,9,10,11)
- Priročnik za izumitelje, Urad RS za intelektualno lastnino. <http://www.uil-sipo.si/uil/urad/prirocnik-za-izumitelje>; dostopano dec.2012. (Izvirnik Priročnika Evropskega patentnega urada za izumitelje na <http://www.epo.org/topics/innovation-and-economy/handbook.html>)
- Innovation Management and the Knowledge - Driven Economy. European Commission. [http://www.cordis.lu/innovation-policy/studies/im\\_study6.htm](http://www.cordis.lu/innovation-policy/studies/im_study6.htm)

### Cilji in kompetence:

#### Izhodišča

- Vedno redkeje se raziskovalec v svoji karieri ukvarja samo z znanostjo, ampak tudi s poslovnimi oz. tržnimi vidiki inovacij in tehnologij.
- Raziskovalce je potrebno usposobiti, da bodo ustvarjali nove poslovne priložnosti, ki bodo konkurenčne v globalni ekonomiji in tako povečevale ekonomsko rast.
- Od raziskovalcev se vse pogosteje zahteva, da ovrednotijo svoje delo tudi z vidika potencialne ekonomske uspešnosti.
- Raziskovalci se lahko zaposlijo v organizacijah, ki tržijo tehnologije ali razvijajo nove konkurenčne proizvode.

#### Splošne kompetence:

- obvladanje razvojnih metod, postopkov in procesov, razvoj kritične in samokritične presoje in sinteze,
- sposobnost uporabe znanja v praksi,
- razvoj komunikacijskih sposobnosti in spretnosti,
- sodelovanje, delo v skupini.

#### Predmetnospecifične kompetence:

- Predmet pripravlja študente za uporabo znanja s področja razvoja in komercializacije inovativnih tehnologij.

### Objectives and competences:

#### Background

- More and more infrequently in their careers, researchers can be engaged in science alone, instead they must now be involved in operation and management as well as in commercialization of innovation and technology.
- Researchers need to be trained to create new business opportunities which will be competitive in the global economy and thus enhance economic growth.
- More and more frequently, researchers are required to evaluate their work from the aspect of its potential economic success.
- Researchers may take a job in organizations which market technologies or develop new competitive products.

#### General Competences:

- mastering of R&D methods, procedures and processes, critical thinking and synthetic work
- ability to apply knowledge in practice,
- communications skills to present research & technological achievement
- cooperation, team work

#### Course Specific Competences:

- This course prepares students to apply knowledge from development and commercialization of innovative technologies.

**Predvideni študijski rezultati:****Znanje in razumevanje:**

- Razumevanje raziskav in razvoja ter komercializacije inovativnih tehnologij

Študentje bodo dobili managerska znanja in spretnosti:

- razumevanjem trga/odjemalcev
- razumevanje tehnološkega razvoja
- razumevanje prebojnega potenciala RR-a oz. tehnologij
- sposobnost dizajnerskega pristopa pri razvoju, vrednotenju in implementaciji inovativnih tržnih proizvodov
- sposobnost priprave poslovnega načrta
- sposobnost komercializacije znanja in inovativnih tehnologij.

**Intended learning outcomes:****Knowledge and Understanding**

- The student will understand R&D and commercialization of innovative technologies

Students will acquire management knowledge and skills:

- understanding of market / customers
- understanding of technological development
- understanding of R&D/technology breakthrough potential
- the ability to design thinking within development, evaluation and implementation of innovative business products
- ability to prepare a business plan
- ability for commercialization of knowledge and innovative technologies.

**Metode poučevanja in učenja:**

- predavanja
- seminarji
- študije primerov,
- razgovor/ diskusija/debata
- samostojno delo študentov

**Learning and teaching methods:**

- lectures
- seminar work
- case studies
- discussion / debate
- individual work of students

Delež (v %) /

Weight (in %)

**Načini ocenjevanja:****Assessment:**

Projektna naloga	60 %	Project work
Seminarska naloga	40 %	Term paper

**Reference nosilca / Lecturer's references:**

- LIKAR, Borut, ROPRET, Marko, FATUR, Peter, KOPAČ, Janez, ŠKAFAR, Maja. Innovation of low and medium-low processing industry : a reference innovation model. *The business review, Cambridge*, Summer 2012, vol. 20, no. 1, str. 159-165. [COBISS.SI-ID [4445655](#)]
- MARKIČ, Mirko, LIKAR, Borut, MEŠKO, Maja, RAŠIČ, Katja, ŽIVKOVIČ, Snežana B. Innovation policy and successfulness of micro and small companies in the Republic of Slovenia. *Afr. j. bus. manag.*, Sep. 2011, vol. 5, no. 22, str. 9559-9567, tabele. <http://www.academicjournals.org/ajbm/PDF/pdf2011/30Sept/Markic%20et%20al.pdf>. [COBISS.SI-ID [4093655](#)]
- FATUR, Peter, LIKAR, Borut, ROPRET, Marko. Going open while innovating: does it pay?. *Int. j. ind. eng. manag.*. [Print ed.], 2010, vol. 1, no. 3, str. 77-83, ilustr., tabele. <http://www.ftn.uns.ac.rs/ijiem/paper/IJEM0301reviewfinal.pdf>. [COBISS.SI-ID [3872727](#)]
- LIKAR, Borut, MIKLAVČIČ, Damijan. Organisation and motivation of researchers in an interdisciplinary research team. V: KERN, Tomaž (ur.), RAJKOVIČ, Vladislav (ur.). *People and sustainable organization*. Frankfurt am Main [etc.]: Peter Lang, 2011, str. 147-165, tabele. [COBISS.SI-ID [8715092](#)]
- LIKAR, Borut. *Cradle with a motor swinging element : DE112011103612 (B4), 2017-01-05*. Munchen: German Patent and Trademark Office, 2017. 7 str., ilustr. [COBISS.SI-ID [4380119](#)]