SISTEMI PLANIRANJA IN VODENJA PROIZVODNJE

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	SISTEMI PLANIRANJA IN VODENJA PROIZVODNJE
Course title:	SYSTEMS OF PRODUCTION PLANNING AND CONTROL
Članica nosilka/UL Member:	UL FS

Študijski programi in stopnja	Študijska smer	Letnik	Semestri	Izbirnost
Strojništvo, tretja stopnja, doktorski	Proizvodno inženirske znanosti, kibernetika in mehatronika (smer)	1. letnik, 2. letnik	Celoletni	izbirni

Univerzitetna koda predmeta/University course code:	0033470
Koda učne enote na članici/UL Member course code:	7315

Predavanja /Lectures	Seminar /Seminar	Vaje /Tutorials	Klinične vaje /Clinical tutorials	Druge oblike študija /Other forms of study	Samostojno delo /Individual student work	ECTS
90					160	10

Nosilec predmeta/Lecturer:	Tomaž Berlec

Izvajalci predavanj:	Tomaž Berlec
Izvajalci seminarjev:	
Izvajalci vaj:	
Izvajalci kliničnih vaj:	
Izvajalci drugih oblik:	

Izvajalci praktičnega usposabljanja:	
Vrsta predmeta/Course type:	Izbirni predmet /Elective course

Jeziki/Languages:	Predavanja/Lectures:	Angleščina, Slovenščina
	Vaje/Tutorial:	Angleščina, Slovenščina

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
Veljajo splošni pogoji za doktorski študij.	General prerequisites for the third level studies.

Vsebina:	**Content (Syllabus outline):**
Strategije planiranja in vodenja proizvodnje. Realni pretočni čas operacije in naročila kot osnova za realno planiranje in vodenje proizvodnje.	Strategies of production planning and control. Real flow time of operation and order as the basis for realistic production planning and control.
Projektno planiranje in vodenje proizvodnje, MRPI in MRPII sistem planiranja in vodenja proizvodnje, OPT – sistem ozkih grl, BORA – sistem lansiranja delovnih nalogov glede na obremenitev, sistem napredovalnih števil, Kanban sistem.	Project production planning and control, MRPI and MRPII system planning and control of production, OPT - bottlenecks system, BORA - launching system of work orders in relation to the load, the system progressive numbers, Kanban system.
Strategije: KAIZEN, vitka proizvodnja, Just in Time proizvodnja.	Strategy: KAIZEN, lean production, Just in Time production.
Pregled nad računalniško podprtimi komercialnimi sistemi planiranja in vodenja proizvodnje.	Overview of computer-based commercial systems for production planning and control.
Trofazni koncept izbora in uvedbe računalniško podprtega komercialnega sistema planiranja in vodenja proizvodnje (priprava, izbor in uvedba sistema).	Three phase concept selection and introduction of computerized commercial system for production planning and control (preparation, selection and introduction of the system).

Temeljna literatura in viri/Readings:

[1] San Cristóbal Mateo, José Ramón: Management science, operations research and project management , 2015, COBISS.SI-ID - 14358299
[2] Phanden, Rakesh Kumar | Ajai, Jain | Davim, J. Paulo: Integration of process planning and scheduling : approaches and algorithms, 2020, COBISS.SI-ID - 17409539
[3] Liker, Jeffrey K.: The Toyota way : 14 management principles from the world's

greatest manufacturer, 2nd ed., 2021, COBISS.SI-ID - 67462403
[4] J Reid, R. Dan ; Sanders, Nada R.: Operations management : an integrated approach, 7th ed, Wiley cop, 2020, COBISS.SI-ID - 146810371.
[5] J Akhtar, Jawad: Production planning and control with SAP ERP, 2nd ed. 2016, COBISS.SI-ID - 15131163

Cilji in kompetence:	Objectives and competences:
Cilji:	**Goals:**
Študentu podati vlogo in pomen sistemov planiranja in vodenja proizvodnje z opisom in ocenami alternativnih sistemov ter seznanitvijo s komponentami računalniško podprtih sistemov in metodologijo izbora najprimernejšega sistema planiranja in vodenja proizvodnje.	The principal goal is to show the student the role and importance of production planning and control, system functions and an assessment of alternative systems of production planning and control. They will be acquaint to the components of computer added systems and the methodology of selecting the most appropriate system for production planning and control.
Kompetence:	**Competences**:
Študent osvoji znanja o delovanju in izboru najprimernejšega sistema za planiranje in vodenje proizvodnje.	Student acquires the knowledge of the functioning and selecting the most appropriate system for production planning and control.

Predvideni študijski rezultati:	Intended learning outcomes:
Študent osvoji znanja o delovanju in izboru najprimernejšega sistema za planiranje in vodenje proizvodnje.	Student acquires the knowledge of the functioning and selecting the most appropriate system for production planning and control.

Metode poučevanja in učenja:	Learning and teaching methods:
Predavanja, laboratorijske vaje, seminarsko delo, e-izobraževanje, konzultacije. Seminarsko delo v čim večji meri navezujoče se na področje doktorskega raziskovanja. Študij z uporabo priporočene literature.	Lectures, laboratory practice & seminar work, e-education, consulting. The seminar work is related, as much as possible, to the student's doctoral research field. Study on a recommended literature basis.

Načini ocenjevanja:	Delež/Weight	Assessment:
Ustni izpit, poročilo o seminarskem delu. Pogoj za opravljanje ustnega izpita je uspešno izdelano		Oral exam, report on seminar work. The condition for admission to oral exam is successful

in pozitivno ocenjeno seminarsko delo. Deleži pri končni oceni predmeta: • Seminarska naloga (40%) • Ustni izpit (60%)		completion of seminar work, rewarded with a passing grade. Weights in the final course grade: • Seminar assignment (40%) • Oral exam (60%)

Ocenjevalna lestvica: **Grading system:**

Reference nosilca/Lecturer's references:

Tomaž Berlec:

MARC, Ivan, KUŠAR, Janez, BERLEC, Tomaž. Decision-making techniques of the consumer behaviour optimisation of the product own price. Applied sciences. 2022, vol. 12, iss. 4, str. 1-14, ilustr. ISSN 2076-3417. https://www.mdpi.com/2076-3417/12/4/2176, DOI: 10.3390/app12042176. [COBISS.SI-ID 99620867], [JCR, SNIP]

CIMERMANČIČ, Davorin, KUŠAR, Janez, BERLEC, Tomaž. A procedure for the introduction of leanness into a company. Central European journal of operations research. 2021, str. 1-31, ilustr. ISSN 1435-246X. https://link.springer.com/article/10.1007/s10100-020-00732-3, DOI: 10.1007/s10100-020-00732-3. [COBISS.SI-ID 48989443], [JCR, SNIP]

MUROVEC, Jure, KUŠAR, Janez, BERLEC, Tomaž. Methodology for searching representative elements. Applied sciences. 2019, vol. 9, iss. 7, f. 1-15, ilustr. ISSN 2076-3417. https://www.mdpi.com/2076-3417/9/17/3482/htm, DOI: 10.3390/app9173482. [COBISS.SI-ID 16755995], [JCR, SNIP, WoS do 9. 8. 2021: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0,33, Scopus do 12. 3. 2021: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1,00]

ZUPAN, Hugo, HERAKOVIČ, Niko, ŽEROVNIK, Janez, BERLEC, Tomaž. Layout optimization of a production cell. International journal of simulation modelling. Dec. 2017, vol. 16, nr. 4, str. 603-616, ilustr. ISSN 1726-4529. http://www.ijsimm.com/Full_Papers/Fulltext2017/text16-4_603-616.pdf. [COBISS.SI-ID 15898139], [JCR, SNIP, WoS do 24. 12. 2021: št. citatov (TC): 11, čistih citatov (CI): 11, čistih citatov na avtorja (CIAu): 2,75, Scopus do 1. 11. 2021: št. citatov (TC): 15, čistih citatov (CI): 15, čistih citatov na avtorja (CIAu): 3,75]