

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	SISTEMI KAKOVOSTI
Course title:	QUALITY SYSTEMS

Študijski programi in stopnja	Študijska smer	Letnik	Semestri
Strojništvo, tretja stopnja, doktorski	Proizvodno inženirske znanosti, kibernetika in mehatronika (smer)		Celoletni

Univerzitetna koda predmeta/University course code:

Predavanja	Seminar	Vaje	Klinične vaje	Druge oblike študija	Samostojno delo	ECTS
90					160	10

Nosilec predmeta/Lecturer:

Izvajalci predavanj:	Drago Bračun, Davorin Kramar
Izvajalci seminarjev:	
Izvajalci vaj:	
Izvajalci kliničnih vaj:	
Izvajalci drugih oblik:	
Izvajalci praktičnega usposabljanja:	

Vrsta predmeta/Course type:

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

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:

Sistemske vidike kakovosti: Proizvod in tržišče. Motivacija in obnašanje kupca. Opredelitev kakovosti. Atributi kakovosti. Kakovost kot vrednost. Koncepti celovitega upravljanja kakovosti.
Model kakovosti: Osnovne mere modela. Obvladovanje kakovosti. Vrednost proizvoda. Generične specifikacije proizvoda. Ocenjevanje funkcionalnih vrednosti. Več-atributni model kakovosti proizvoda.
Funkcionalno strukturiranje kakovosti v proizvodnem podjetju: Metodologija strukturiranega razvoja kakovosti. Taksonomija merskih karakteristik kakovosti. Mere za določitev performanc proizvodne strukture in njenih elementov. Razvoj kakovosti na sistemskem nivoju in v podsistemih. Načrtovanje parametrov in toleranc proizvoda. Kakovost in obvladovanje stroškov. Zagotavljanje kakovosti na proizvodnem nivoju: Metode načrtovanja in kontroliranja kakovosti. Tehnike

Content (Syllabus outline):

A System aspect to quality: Product and market. Motivation and customer behaviour. Definitions of quality. Attributes of quality. Quality as a value. Concepts of quality management. Quality model. Basic characteristics of the model, Quality control. A product value. Generic product specifications. Assessment of functional values. A multi-attribute quality model of a product.
Functional structuring of a quality in a manufacturing enterprise: A methodology of strategic quality deployment. A taxonomy of quality characteristics. Performance measures of manufacturing structures and their elements. Quality design on system level. Parameter and tolerance design. Quality and cost control. Quality assurance on production level: Methods for quality design and control. Techniques for process improvement. Computer-aided quality management system in an

izboljševanja procesov. Model računalniško podprtega obvladovanja kakovosti v podjetju.	enterprise.
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Temeljna literatura in viri/Readings:

[1] Cook, H.E.: Product Management - Value, quality, cost, price, profit and organization, Kluwer Academic Publishers, 1997.
[2] Phadke, M.S.: Quality engineering using robust design, Prentice-Hall International, 1989.
[3] Myers, R.H.: D.C. Montgomery, C.M. Anderson-Cook, Response Surface Methodology: Process and Product Optimization Using Designed Experiments, John Wiley, 2009.
[4] Dale B.G.: Managing Quality, Fourth Edition, Blackwell Publishing, Oxford, UK, 2003.
[5] Montgomery, D.C.: Introduction to statistical quality control.- 2nd ed., J. Wiley, 1991

Cilji in kompetence:

<p>Cilji: Vsebina predmeta je usmerjena k razumevanju sistemskega pristopa k zasnovi, gradnji, strukturiranju in operacijam sistemov kakovosti v luči podpore razvoju proizvoda in organizacije.</p> <p>Kompetence: Študent osvoji pristop k načrtovanju sistemov kakovosti ter metodam načrtovanja, zagotavljanja in obvladovanja tako na nivoju načrtovanja proizvoda kot tudi na nivoju proizvodnje. Je usposobljen razviti sodoben sistem kakovosti, vključujoč tudi računalniško podprte rešitve.</p>	<p>Objectives and competences:</p> <p>Goals: A content of the subject is oriented to understanding a system approach to design, building, structuring and operations quality management systems in terms of product development and organization design.</p> <p>Competences: A student learns how to design quality systems and methods of product and process design, assurance and control as well as manufacturing. A student is qualified also for developing a quality management system.</p>
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Predvideni študijski rezultati:

Študent osvoji pristop k načrtovanju sistemov kakovosti ter metodam načrtovanja, zagotavljanja in obvladovanja tako na nivoju načrtovanja proizvoda kot tudi na nivoju proizvodnje. Je usposobljen razviti sodoben sistem kakovosti, vključujoč tudi računalniško podprte rešitve.	Intended learning outcomes: A student learns how to design quality systems and methods of product and process design, assurance and control as well as manufacturing. A student is qualified also for developing a quality management system.
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Metode poučevanja in učenja:

Predavanja, laboratorijske vaje, seminarsko delo, e-izobraževanje, konzultacije. Seminarsko delo v čim večji meri navezuje se na področje doktorskega raziskovanja. Študij z uporabo priporočene literature.	Learning and teaching methods: 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.
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Načini ocenjevanja:

Način (pisni izpit, ustno izpraševanje, projektni seminar). • projektni seminar (50%) • pisni izpit (30%) • ustno izpraševanje (20%)	Delež/Weight	Assessment: Method (written exam, oral examination, assignments, project) • project seminar (50%) • written exam (30%) • oral examination (20%)
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Reference nosilca/Lecturer's references:

<p>doc.dr. Drago BRAČUN Bračun Drago, Sluga Alojz, Stereo vision based measuring system for online welding path inspection; Journal of Materials Processing Technology, 2015.</p> <p>Vukašinović Nikola, Bračun Drago, Možina Janez, Duhovnik Jože. A new method for defining the measurement-uncertainty model of CNC laser-triangulation scanner. The international journal of advanced manufacturing technology, 2012.</p> <p>Bračun Drago, Gruden Valter, Možina Janez. A method for surface quality assessment of die-castings based on laser triangulation. <i>Measurement science & technology</i>, 2008.</p> <p>Diaci Janez, Bračun Drago, Gorkič Aleš, Možina Janez, Rapid and flexible laser marking and engraving of tilted and curved surfaces. Optics and lasers in engineering, 2010.</p>
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