	UČNI NAČRT PREDMETA/COURSE SYLLABUS
Predmet	Poslovna matematika
Course title	Business Mathematics

Študijski program in stopnja **Study programme and level**	**Študijska smer** **Study field**	**Letnik** **Academic year**	**Semester** **Semester**
Upravljanje in poslovanje 1	Upravljanje in poslovanje	1.	1.
Business and Management 1	Business and Management	1st	1st

Vrsta predmeta/Course type	obvezni/obligatory
Univerzitetna koda predmeta/University course code	1N104

Predavanja **Lectures**	**Seminar** **Seminar**	**Sem. vaje** **Tutorial**	**Lab. vaje** **Laboratory work**	**Teren. vaje** **Field work**	**Samost. delo** **Individ. work**	**ECTS**
30		60			85	7

Nosilec predmeta/Lecturer:	doc. dr. Jelena Klisara

Jeziki/ Languages:	**Predavanja/Lectures:**	slovenski/Slovenian
	Vaje/Tutorial:	slovenski/Slovenian

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
• Pogoj za vključitev v delo je vpis v 1. letnik študija. • Študent mora pred pristopom k izpitu pravočasno oddati vse domače naloge in biti ustrezno prisoten vajah in predavanjih.	• The prerequisite for participation is enrolment in the first year of study. • Students have to submit all their homework before the examination and be adequately present at all the exercises and lectures.

Vsebina:	**Content (Syllabus outline):**
• *Osvežitev osnovnih pojmov in postopkov:* osnovni pojmi o množicah in operacije nad množicami, številske množice, delo s potencami, koreni in logaritmi, reševanje enostavnih polinomskih, logaritemskih in eksponentnih enačb. • *Gospodarski račun:* procentni in promilni račun, razmerja in sorazmerja, delitveni račun, zaokrožanje rezultatov. • *Zaporedja v poslovni matematiki:* definicija in lastnosti splošnega zaporedja, aritmetično in geometrijsko zaporedje. • *Obrestni račun:* linearna in eksponentna rast, navadni in obrestno obrestni račun, dekurzivno in anticipativno obrestovanje,	• *Refreshing basic concepts and methods:* basic concepts of sets and operations on the masses, numbers, sets, working with potentisations, roots and logarithms, solving simple polynomial, logarithmic and exponential equations. • *The economic account:* percentage accounts, per thousand accounts, ratios and proportions, the distribution account, rounding off the results. • *The sequence in business mathematics:* definition and properties of general sequences, the arithmetic and geometric series. • *Interest account:* linear and exponential growth, common interest and the interest

relativna in konformna obrestna mera, zvezno obrestovanje, načelo ekvivalence glavnic, končna in začetna vrednost denarnega toka, vloge, rente, kreditni posli, donosnost investicij, menice, obveznice, uporaba računalnika pri obrestnem računu. • *Kombinatorika:* Osnovni pojmi in osnovna zakona kombinatorike, permutacije, variacije in kombinacije. • *Verjetnostni račun:* poskusi, dogodki, operacije nad dogodki, statistična definicija verjetnosti dogodka, pogojna verjetnost, formula o popolni verjetnosti, Bayesova formula, dvofazni poskusi, zaporedja neodvisnih poskusov, diskretne slučajne spremenljivke in njihove številske karakteristike (matematično upanje, varianca in standardni odklon), normalno porazdeljene zvezne slučajne spremenljivke. • *Osnove matrične algebre:* osnovni pojmi, povezani z matrikami, računanje z matrikami, determinanta matrike, inverz matrike, sistemi linearnih enačb in neenačb.	account, remuneration, conform rate, relative interest rate, federal remuneration, the principle of equivalence principal, final and initial value of cash flow, deposits, rents, credit operations, return on investments, notes, bonds, use of computer in interest account. • *Combinatorics:* Basic concepts and fundamental laws of combinatorics, permutations, variations and combinations. • *Probability equation:* experiments, events, operations at the events, the statistical definition of probability of an event, conditional probability, formula of total probability, Bayes' formula, the two-phase experiments, a sequence of independent trials, discrete random variables and their numerical characteristics (mathematical hope, variance and standard deviation), normally distributed continuous random variables. • *Fundamentals of matrix algebra:* basic concepts associated with matrices, computation of matrices, matrix determinant, inverse matrices, systems of linear equations and inequalities.

Temeljna literatura in viri/Readings:

Temeljna literatura/Basic literature

Čibej, J. A. (2001). Matematika za računovodje in finančnike. Ljubljana: Zveza računovodij, finančnikov in revizorjev Slovenije.
Indihar, S. et al. (2005). Matematika za ekonomiste, 2. del. Maribor: Ekonomsko poslovna fakulteta.
Indihar, S. et al. (2006). Matematika za ekonomiste, 1. del. Maribor: Ekonomsko poslovna fakulteta.

Priporočljiva literatura/Recommended literature

Fošner, A. (2008). Osnove poslovne matematike. Koper: Fakulteta za management.
Povh, J. in Pustavrh, S. (2003). Matematične metode, zbirka rešenih nalog. Novo mesto: Visoka šola za upravljanje in poslovanje.

Cilji in kompetence:	**Objectives and competences:**
Učna enota prispeva predvsem k razvoju naslednjih splošnih in specifičnih kompetenc: • usposobljenost za raziskovanje na področju upravljanja in poslovanja ter razvoj kritične in samokritične presoje; • avtonomnost, (samo)kritičnost, (samo)refleksivnost, samoevalviranje in prizadevanje za kakovost; • sposobnost za reševanje konkretnih	*The learning unit mainly contributes to the development of the following general and specific competences:* • capacity for research in the field of management and operations and the development of critical and self-assessment; • autonomy, (self-) critical, (self-) reflexivity, self-evaluation and

delovnih problemov na področju upravljanja in poslovanja z uporabo matematičnih metod in postopkov; • sposobnost pridobivanja, selekcije in evalvacije novih informacij in zmožnost ustrezne interpretacije v kontekstu na področju ekonomije, podjetništva, človeških virov in kvantitativnih metod;	commitment to quality; • ability to solve practical problems of working in the field of management and operations with the use of mathematical methods and procedures; • ability to access, selection and evaluation of new information and the ability to interpret them relevant in the context of economics, entrepreneurship, human resources and quantitative methods.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: *Študent/študentka:* • osveži in obnovi najpomembnejše računske postopke; • spozna časovno dimenzijo denarja in najpomembnejša načela, ki veljajo pri delu z denarjem, in je tako usposobljen/-a za delo s posojili, z investicijami itd.; • se nauči oceniti velikostni red rezultata in razvija kritično mišljenje; • pridobi tisto znanje iz verjetnostnega računa in matrične algebre, ki ga bo potreboval/-a pri ostalih predmetih.	Knowledge and understanding: *Students:* • refresh and renew the main computational procedures; • understand the time dimension of money and the most important principles that apply when working with money, and thus qualify for working with loans, investments, etc; • learn to assess the size order of results and develop critical thinking; • acquire knowledge of probability theory and matrix algebra, which will be needed in other subjects.

Metode poučevanja in učenja:	**Learning and teaching methods:**
• *predavanja* z aktivno udeležbo študentov (razlaga, diskusija, vprašanja, primeri, reševanje problemov). • *vaje*, kjer bodo študentje na konkretnih problemih ponovili, utrdili in dodatno osvetlili pojme in metode, spoznane na predavanjih. • *kolokviji:* z njimi bodo študentje stimulirani, da sproti študirajo snov, ki bo obravnavana na predavanjih in vajah.	• *lectures* with the active participation of students (explanation, discussion, questions, examples, problem solving). • *tutorial*, where students will renew their knowledge on concrete problems, consolidate and further highlight the concepts and methods, perceived with the lectures. • *colloquiums:* for stimulation of students to keep studying the material to be examined in lectures and exercises.

Načini ocenjevanja:	Delež (v %) Weight (in %)	**Assessment:**
Način (pisni izpit, ustno spraševanje, naloge, projekt):		Types (written examination, oral examination, coursework, project):
• pisni izpit (študent lahko opravi pisni izpit tudi, če ima oba kolokvija pozitivno ocenjena).	80	• written exam (students can pass a written exam also if both colloquiums are positively evaluated).
• sprotno delo.	20	• ongoing work.