Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	Seminar
Course title:	Seminar

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Enovit magistrski študijski program druge stopnje Predmetni učitelj	**/**	**3.**	**6.**
Five-year master's degree program Subject Teacher	**/**		

Vrsta predmeta / Course type	Obvezni / Obligatory
Univerzitetna koda predmeta / University course code:	

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
	30				**90**	**4**

Nosilec predmeta / Lecturer:	Bojan Hvala

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisits:**
Jih ni.	None.

Vsebina:	**Content (Syllabus outline):**

. Študent preštudira zaključeno poglavje iz elementarne matematike in na to temo pripravi zaokroženo predavanje. Pri predstavitvi uporabi sodobna tehnična sredstva. Gradivo odda v pisni obliki. Sama tematika se lahko iz leta v leto spreminja, prav tako temeljna literatura.	A student get a deeper insight in a topic from elementary mathematics and presents it in a concise presentation. The use contemporary technical tools at the presentation is welcome. A student also prepares a written material. The main topic of the Seminar varies as well as basic references.

Temeljni literatura in viri / Readings:

Se iz leta v leto spreminjajo. Gradivo so lahko bodisi poljudno pisane knjige,bodisi članki iz revij, ki prinašajo zanimive elementarne rezultate, kot npr. Mathematical Gazette, Mathematical Magazine, American Mathematical Monthly itd.

The basic references change from year to year. The basic materials could be either texstbooks on elementary problems, or articles from journals, bringing interesting results from elementary mathematics, as Mathematical Gazette, Mathematical Magazine, American Mathematical Monthly etc.

Colin Robson: How to do a Research Project: A Guide for Undergraduate Students, Blackwell Publishing, 2008.

Linda Dickson, Margaret Brown, Olwen Gibson: Children Learning Mathematics : a Teacher's Guide to Recent Research, Cassell, 1991.

Navodila za izdelavo raziskovalnih nalogo iz matematike v osnovnih in srednjih šolah – različna regionalna tekmovanja raziskovalnih nalog.

Cilji in kompetence:	**Objectives and competences:**
• Študent se sooči s samostojnim poglabljanjem v literaturo. • Študent pripravi daljšo seminarsko predstavitev obravnavane tematike. Pri tem uporabi sodobna tehnična sredstva, kot so programi za dinamično geometrijo, programi za simbolno računanje, programi za risanje krivulj in ploskev ter podobno. • Študent se seznani z osnovami pisanja matematičnega teksta.	• Student faces the experience of individual access to math material. • Student prepares longer presentation of a given topic. At this presentation he uses contemporary technical tools as computer software for dynamic geometry, symbolic calculation and presenting curves and surfaces and other ICT devices. • Student gets familiar with the basic roles of writing mathematical texts

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: • Spoznavanje novih vsebin iz elementarne matematike. • Spoznavanje pristopa k samostojni obravnavi novega teksta . • Začetna izkušnja glede priprave seminarskega predavanja • Začetna izkušnja glede pisanja matematičnega teksta.	Knowledge and Understanding: • Discovering new results in elementary mathematics. • Getting familiar with the individual approach to math materials. • Introductionary experience in presenting mathematical topics in seminar. • Knowledge about the roles in writing mathematical texst.

Prenesljive/ključne spretnosti in drugi atributi:	Transferable/Key Skills and other attributes:
• Seminarsko predavanje pomeni vajo v komuniciranju z uporabniki pri predstavitvi matematičnih vsebin. To je pomembna veščina za diplomante matematike, ki so primarno orientirani h komuniciranju z uporabniki. • Spoznavanje osnovnih pravil pri pisanju matematičnega teksta predstavlja osnovo za obsežne tovrstne dejavnosti na drugi stopnji študija, pa tudi kasneje pri morebitnem matematičnem publiciranju. • Spoznavanje razlike med dobesednim prevodom določenega teksta in dvofaznim postopkom, pri katerem prva faza pomeni poglobljeno razumevanje, druga pa predstavitev osebnega videnja in razumevanja tematike, je ključna osnova za kvalitetno delo na podlagi strokovne literature.	• Seminar presentation is a good exercise in presenting mathematical topics to the audience. This is an important skill for mathematicians, basically orientated in work, where contact with users is essential. • Knowledge about the roles in writing mathematical texts makes a basis for extended activities of this kind on higher levels of education, as well as a basis for possible publication efforts later. • Understanding the difference between a literate translation of the mathematical text and the two phase procedure, in which the first phase brings deep understanding and the second phase means the presentation of this individual understanding in a way, that is partly independent form the original text. This understanding is crutial for quality educational work on a basis of written materials.

Metode poučevanja in učenja:	**Learning and teaching methods:**
• Samostojno delo • Analiza seminarjev • Analiza pisnega izdelka	• Individual work • Discussion on presentations • Comments on written works

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Type (examination, oral, coursework, project):
• Seminarska predstavitev teme	50%	• Oral presentation
• Oddano pisno gradivo.	50%	• Written presentation

Reference nosilca / Lecturer's references:

1. HVALA, Bojan. Diophantine Steiner triples. *Math. Gaz.*, March 2011, vol. 95, no. 532, str. 31-39. [COBISS.SI-ID 18256648]
2. HVALA, Bojan. Diophantine Steiner triples and Pythagorean-type triangles. *Forum geom.*, 2010, vol. 10, str. 93-97. http://forumgeom.fau.edu/FG2010volume10/FG201010.pdf. [COBISS.SI-ID 15669337]
3. HVALA, Bojan. Modernizing mathematics education in Slovenia : a teacher friendly approach. V: LAMANAUSKAS, Vincentas (ur.). *Challenges of science, mathematics and technology teacher education in Slovenia*, (Problems of education in the 21st century, vol. 14). Siauliai: Scientific Methodological Center Scientia Educologica, 2009, str. 34-43. [COBISS.SI-ID 17351944]

4. HVALA, Bojan. Generalized Lie derivations in prime rings. *Taiwan. j. math.*, dec. 2007, vol. 11, iss. 5, str. 1425-1430. [COBISS.SI-ID 15969288]
5. HVALA, Bojan. Generalized derivations in rings. *Commun. Algebra*, 1998, 26, št. 4, str. 1147-1166. [COBISS.SI-ID 8090713]