

ZAKLJUČNA NALOGA

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Zaključna naloga
Course title:	FINAL THESIS
Članica nosilka/UL Member:	UL FS

Študijski programi in stopnja	Študijska smer	Letnik	Semestri	Izbirnost
Strojništvo - razvojno raziskovalni program, prva stopnja, univerzitetni	Ni členitve (študijski program)	3. letnik	2. semester	obvezni

Univerzitetna koda predmeta/University course code:	0562776
Koda učne enote na članici/UL Member course code:	2035-U

Predavanja /Lectures	Seminar /Seminar	Vaje /Tutorials	Klinične vaje /Clinical tutorials	Druge oblike študija /Other forms of study	Samostojno delo /Individual student work	ECTS
	35			70	145	10

Nosilec predmeta/Lecturer:	Vsi nosilci v programu
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Izvajalci predavanj:	
Izvajalci seminarjev:	
Izvajalci vaj:	
Izvajalci kliničnih vaj:	
Izvajalci drugih oblik:	
Izvajalci praktičnega usposabljanja:	

Vrsta predmeta/Course	Obvezni splošni predmet /Compulsory general course
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type:

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Jeziki/Languages:

Predavanja/Lectures:	Slovenščina
Vaje/Tutorial:	Slovenščina

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

Prerequisites:

Za pristop k izdelavi zaključne naloge, ki je sklepna obveznost v študijskem programu, je potrebno imeti opravljene vse preostale študijske obveznosti v programu. Zaključna naloga je samostojno delo, s katerim študent dokaže sposobnost izdelati dodeljeno mu nalogo v okviru pričakovane kakovosti. Delo je praviloma realizirano v raziskovalnem laboratoriju fakultete, izjemoma pa tudi v spregi z industrijskim okoljem.

The Final Thesis being the final obligation in the study programme, it is required for beginning the work on it that all previous study obligations are accomplished by the student. The thesis is a self-created project assignment, elaborated individually by the student to prove its capability of carrying out the assigned task independently and at the level of the qualification sought. The work is generally executed at a faculty laboratory, however, possible execution in the industrial environment is not excluded.

Vsebina:

Content (Syllabus outline):

Vsebina zaključne naloge je dogovorjena z izbranim mentorjem na UL FS ter opcionalno s somentorjem v neposredni proizvodnji, pri čemer je pri opredelitvi vsebine potrebno upoštevati omejenost časa, ki ga ima študent na voljo za izdelavo zaključne naloge. Upošteva se osnovni cilj, ki je preveriti študentovo sposobnost izdelati dodeljeno mu nalogo samostojno in v okviru pričakovane kakovosti, je vsebina omejena na specifično strokovno področje, izhajajoč pri tem iz v okviru študijskega programa usvojenih znanj in veščin. Ob tem morajo biti pričakovani izsledki jasno opredeljeni.

The content of the Final Thesis work is defined in coordination with the chosen mentor at the Faculty, and optionally with a co-mentor from the industry. Considering the limited time for the thesis realization and bearing in mind the primary objective, which is a verification of the student's capability of carrying out an assigned task independently and at the level of the qualification sought, the content should be limited to a specific topic within the framework encompassing the knowledge and practical skills attained during the degree programme, but with the emphasis in the realization of the project clearly specified.

Temeljna literatura in viri/Readings:

Interna in druga študijska gradiva se smiselno opredelijo ob definiranju teme za vsakega študenta posebej.

Internal and other study materials determined reasonably for each student

individually related to the assigned task

Cilji in kompetence:

Cilji:

Cilj zaključne naloge je omogočiti študentu, da v okviru vsebine, ki sledi njegovemu strokovnemu zanimanju, izkaže sposobnost izdelati dodeljeno mu nalogo samostojno in v okviru pričakovane kakovosti, izhajajoč pri tem iz v okviru študijskega programa usvojenih znanj in veščin.

Kompetence:

S samostojno izdelavo zaključne naloge pod mentorstvom dodeljenega mentorja študent potrdi zmožnost prevzema odgovornosti za uspešno izvedbo dodeljene projektne naloge. Z izdelavo pisnega poročila ter javnim ustnim zagovorom študent dokaže sposobnost formuliranja in obravnave opredeljenega problema, argumentacije izbranega načina reševanja ter interpretacije dobljenih rezultatov. Za učinkovito delo v strojnem inženirstvu študent z zaključno nalogo pridobi še dodatne izkušnje v obvladovanju tehniških postopkov in veščin uporabe informacijskih tehnologij ter dela s sodobnimi računskimi orodji.

Objectives and competences:

Goals:

Chosen largely in accordance with individual motivation the goal of the Final Thesis is to give the students opportunity of demonstrating their capability in carrying out an assigned task independently and at the level of the qualification sought, considering, of course, the knowledge and practical skills attained during the degree programme.

Competences:

With the Final Thesis prepared independently under the guidance of the selected mentor, the student proves, within the context of a given Final Thesis project, his capability of taking on himself the responsibility to bring the project realization successfully to an end. The project realization involves problem formulation, argumentation on the solution strategy choice, solution completion and results interpretation, which is proved both by a written report and by a defence in the form of an oral presentation. Also, work on the Final Thesis gives the students a chance to prove their ability in mastering the techniques, IT skills and modern computational tools in mechanical engineering practice.

Predvideni študijski rezultati:

Znanje in razumevanje

S samostojno izdelavo zaključne naloge študent:

- utrdi razumevanje temeljnih fizikalnih zakonov in zavedanje o njihovi posledičnosti v tehničnih inženirskih aplikacijah;
- se praktično sooči z vprašanji, ki zadevajo možne inženirske pristope pri reševanju danega tehničnega problema ter strategijo ustrezne

Intended learning outcomes:

Knowledge and understanding

By realizing the Final Thesis independently the student is supposed:

- to consolidate understanding of the basic physical laws and building awareness of their impact on practical engineering applications;
- to confront practically with the issues regarding possible solution approaches and strategy choice considering a given assigned task;

<p>izbire;</p> <ul style="list-style-type: none"> • spozna potrebo in moč obvladovanja tehniških postopkov in veščin uporabe informacijskih tehnologij ter dela s sodobnimi računskimi orodji za učinkovito delo v strojnem inženirstvu; • pridobi izkušnje pri formuliranju in identifikaciji opredeljenega problema, njegovem reševanju ter interpretaciji dobljenih rezultatov in nenazadnje tudi z lastnim ovrednotenjem celotnega dela. <p>Uporaba</p> <p>Uporaba metodoloških pristopov in veščin iz teoretičnega dela študija pri prenosu znanj v prakso.</p> <p>Refleksija</p> <p>Z realizacijo zaključne naloge študent izkaže svojo sposobnost, da v okviru študijskega programa pridobljenega teoretičnega in eksperimentalnega znanja ter ob tematsko opredeljeni strokovni literaturi ustrezno pristopi k reševanju problema. Pri tem izkaže sposobnost samostojnega identificiranja, analize in reševanja problemov v okviru pričakovane kakovosti. Študent izboljša razumevanje teorije in prakse, ob čemer se kritično opredeli do odnosa med teorijo in prakso.</p> <p>Prenosljive spretnosti – niso vezane le na en predmet</p> <p>Sistematični pristop k reševanju opredeljenega problema, komunikacijske spretnosti, sinteza znanj. Ob tem študent utrjuje pisno in ustno izražanje.</p>	<ul style="list-style-type: none"> • to strengthen the awareness of mastering the techniques, IT skills and modern computational tools in mechanical engineering practice; • to get experience on the assigned task formulation and problem identification, its solution completion and results interpretation, together with final self-evaluation. <p>Usage</p> <p>Transferring knowledge from the theoretical part of study into practice using the methodological approaches and skills attained.</p> <p>Reflexion</p> <p>By completing the Final Thesis, the student demonstrates, within the framework of the theoretical and empirical knowledge gained during the degree programme and supplementary specific technical literature related to the thesis, his/her ability to approach, identify, analyse and solve problems autonomously and at the level of the qualification sought. Above all, the student improves understanding of the theory and practice, and, in particular, takes critical position to the relation between them.</p> <p>Transferable skills – related to more than one course</p> <p>Systematic approach to a specified problem solving, communication skills, knowledge synthesis. Students improve oral and written expression.</p>
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Metode poučevanja in učenja:

Delo, ki temelji na v študijskem programu pridobljenem teoretičnem znanju, veščinah, usvojenih na eksperimentalnem, numeričnem in konstrukcijskem področju, ter literaturi, opredeljeni ob definiranju zaključne naloge, izvede študent v obliki seminarskega dela samostojno pod

Learning and teaching methods:

Based on the theoretical knowledge and experimental / numerical / computer design skills attained during the degree programme, which is supplemented by a thesis related literature, autonomous work in a seminar form is performed by the student under supervision of the assigned mentor. Methods used in

mentorstvom dodeljenega mentorja. Uporabljene metode so specifične glede na v zaključni nalogi obravnavano tematiko.	solving the assigned task are problem specific.
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Načini ocenjevanja:	Delež/ Weight	Assessment:
Oceno zaključne naloge sestavljata dve oceni. Prva ocena izhaja na osnovi kakovosti zaključne naloge, katero oceni mentor. Nadaljnje preverjanje v zvezi z zaključno nalogo je kandidatova javna predstavitev dela. Komisija, ki je prisotna na javni predstavitvi dela, oceni prepričljivost zagovora, kar predstavlja drugo oceno. Končna ocena celotnega študija se določi v skladu z metodologijo določanja skupne ocene, ki ob dveh ocenah zaključne naloge upošteva še študentovo uspešnost skozi čas študija pri vseh predvidenih oblikah preverjanja znanja (predavanja, vaje).		The grade of the final thesis is composed of two grades. The first grade is based on the quality of the final thesis as assessed by the mentor. Another review related to the final assignment is the candidate's public presentation of his/her work. The Committee, present at the public hearing, assesses the persuasiveness of the defence, which represents the second grade. The final grade of the entire study is determined according to the methodology of determining the overall grade, which, in addition to the two grades of the final paper, also takes into account the student's performance during the study in all the designated forms of knowledge assessment (lectures, tutorials).

Ocenjevalna lestvica:	Grading system:

Reference nosilca/Lecturer's references:
Nosilci predmeta so vsi profesorji prvostopenjskega univerzitetnega študija, ki imajo že predložene reference. The course coordinators are all 1st cycle university programme professors who already submitted their references.