

Course description

Course abbreviation:	KKS/ZKTP	Page:	1 / 4
Course name:	Increas. of competitiveness of tech. pr.		
Academic Year:	2023/2024	Printed:	03.06.2024 08:08

Department/Unit /	KKS / ZKTP			Academic Year	2023/2024
Title	Increas. of competitiveness of tech. pr.			Type of completion	Exam
Long Title	Parallel increasing of competitiveness of technical products.				
Accredited/Credits	Yes, 4 Cred.			Type of completion	Combined
Number of hours	Lecture 1 [Hours/Week] Tutorial 2 [Hours/Week]				
Occ/max	Status A	Status B	Status C	Course credit prior to	YES
Summer semester	0 / -	10 / -	2 / -	Counted into average	YES
Winter semester	0 / -	0 / -	0 / -	Min. (B+C) students	10
Timetable	Yes			Repeated registration	NO
Language of instruction	Czech			Semester taught	Summer semester
Optional course	Yes			Internship duration	0
Evaluation scale	1 2 3 4			Ev. sc. – cred.	S N
No. of hours of on-premise					
Auto acc. of credit	Yes in the case of a previous evaluation 4 nebo nic.				
Periodicity	K				
Substituted course	None				
Preclusive courses	N/A				
Prerequisite courses	N/A				
Informally recommended courses	N/A				
Courses depending on this Course	N/A				

Course objectives:

Introduce students with the key knowledge of selected complementary areas further enhancing the competitiveness of technical products.

Those are the basic factors influencing the market competitiveness of technical products, analyses, evaluation and reduction of risks of technical products in the designing phase and with the protection of intellectual property rights with focus on industrial property rights related to technical products.

Requirements on student

Completion of practicum credit conditions:

- successfully fulfilment of conditions and submission of a semester work
- successful completion of a credit test

Fulfilling the exam conditions:

- written test with oral interview

Content

Requirements for the quality of technical products are constantly increasing. Using the knowledge of complementary areas, the competitiveness of technical products can be further enhanced. These are mainly the basic factors influencing the market competitiveness of technical products, namely the analysis, evaluation and reduction of risks of technical products in their design phase and the protection of intellectual property with a focus on industrial rights related to technical products.

Weekly lecture contents:

1. Introduction to the subject, basic instructions
2. Risk management - introduction, basic terms, overview of famous accidents, legislation
3. Methods of risk analysis - overview and classification of risk analyses methods
4. Methods of risk analysis - methods of analyses of failure and safety
5. Case study - analysis of technical product in terms of reliability and safety

6. System of the Industrial property
7. Industrial property rights - technical solutions (patent, utility model)
8. Industrial property rights - design (trademark, industrial model)
9. International search systems, case study search
10. Final summary, examination

Fields of study

viz COURSEWARE

Guarantors and lecturers

- **Guarantors:** Doc. Ing. Václav Vaněk, Ph.D. (100%)
- **Lecturer:** Mgr. Ing. Josef Dvořák, Ph.D. (100%), Doc. Ing. Václav Vaněk, Ph.D. (100%)
- **Tutorial lecturer:** Mgr. Ing. Josef Dvořák, Ph.D. (100%), Doc. Ing. Václav Vaněk, Ph.D. (100%)

Literature

- **Basic:** ČSN IEC/ISO 31010 Management rizik ? Techniky posuzování rizik. ÚNMZ vydal ve spolupráci s ALOPEX s.r.o. Praha, 2011.
- **Basic:** Čada K. *Chránit/nechránit - to je otázka..* Alevia. Plzeň, 2014. ISBN 978-80-905538-0-4.
- **Basic:** Hlinovský, J. Marek, J., Blecha, P., Krčálová, E. a Mareček, J. *Management rizik výrobních strojů.* MM Průmyslové spektrum. Praha, 2009.
- **Basic:** Jakl, Ladislav. *Právní ochrana duševního vlastnictví.* 1. vyd. Plzeň : ZČU, 1998. ISBN 80-7082-432-8.
- **Recommended:** Franke, W. D. *Analýza možných způsobů a důsledků závad (FMEA) : příručka.* ČSJ, 2001.
- **Recommended:** ČSN EN 61025 (010676). *Analýza stromu poruchových stavů (FTA).* www.cni.cz. Praha, 2007.
- **Recommended:** Novák, Petr. *Aplikace metody FMEA na návrh a proces pro výrobu středního sloupku zadních dveří automobilu.* Plzeň : Západočeská univerzita. Fakulta strojní, 2002.
- **Recommended:** Piterka, Luboš; Jiříčková, Jana; Lovecký, Martin. *Fault tree analysis of emergency core cooling system and containment spray system of WWER440/V213.* Proceedings of the 2014 15th international scienti. 2014.
- **Recommended:** Bebr, Lukáš; Bícová, Kateřina. *FMEA and its application in the SPC.* mechanika ISSN 0209-2689 Vol. 34, no. 3 (2017), s. 2017.
- **Recommended:** Šafandová, Blanka. *Metoda FMEA z hlediska konstrukční nauky.* Plzeň : Západočeská univerzita, 2000.
- **Recommended:** Gonsorczyková, Petra. *Posouzení možností využití metod QFD a FMEA pro činnosti na FS ZČU.* Plzeň : Západočeská univerzita. Fakulta strojní, 2002.
- **Recommended:** Jakl, Ladislav. *Právní ochrana vynálezů a užitných vzorů : vypracování jejich popisů a nároků na ochranu.* Vyd. 1. Praha : Úřad průmyslového vlastnictví, 2004. ISBN 80-7282-036-2.
- **Recommended:** Hundal, M.S. *Systematic Mechanical Designing: A Cost And Management Perspective.* ASME Press. New York, 1997. ISBN 0-7918-0042-3.
- **Recommended:** Mikulak, Raymond J.; McDermott, Robin E.; Beauregard, Michael R. *The basics of FMEA.* 2nd ed. New York : Productivity Press, 2009. ISBN 978-1-56327-377-3.
- **Recommended:** Dailey, Kenneth W.; Minturn, Martha; Wieckhorst, Doug; Welch, Bruce. *The FMEA pocket handbook : failure mode and effects analysis.* [S.l.] : DW Publishing, 2004. ISBN 978-0-9747221-2-2.

Time requirements

All forms of study

Activities	Time requirements for activity [h]
Contact hours	30
Preparation for an examination (30-60)	40
Individual project (40)	30

Total:

100

assessment methods**Knowledge - knowledge achieved by taking this course are verified by the following means:**

Combined exam

Skills - skills achieved by taking this course are verified by the following means:

Written exam

Project

prerequisite**Knowledge - students are expected to possess the following knowledge before the course commences to finish it successfully:**

to critically understand the design engineering of technical products and their construction structures organs

to use basic knowledge of engineering design of technical products obtained during previous studies

Skills - students are expected to possess the following skills before the course commences to finish it successfully:

to orientate in the basic areas of designing of technical products and their construction structure organs

to describe their basic types, their functional and working principles and other basic properties and its characteristics

teaching methods**Knowledge - the following training methods are used to achieve the required knowledge:**

Lecture supplemented with a discussion

Collaborative instruction

Skills - the following training methods are used to achieve the required skills:

Practicum

learning outcomes**Knowledge - knowledge resulting from the course:**

of risk analysis, its evaluation and mitigation, knowledge of commonly used methods for risk analysis with respect to the whole life cycle of the technical product

of intellectual property rights with focus on industrial rights of technical solutions and design of technical product

of database systems for industrial rights search related to technical products

Skills - skills resulting from the course:

analyze risks, evaluate and reduce them in a broader context for simpler technical products

understand the issue of intellectual property rights, especially the field of industrial rights to technical solution and design of technical products

to oriented in the database systems for industrial property rights search related to technical products

Course is included in study programmes:

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Engineering	Bachelor	Full-time	Automotive Industry Specialist	1	2020	2023	Compulsory courses	A	3	LS
Mechanical Engineering	Bachelor	Full-time	Design Engineering of Machines and Technical Devices	1	2020	2023	Povinně volitelné předměty specializace	B	3	LS

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Mechanical Engineering	Bachelor	Combined	Design Engineering of Machines and Technical Devices	1	2020	2023	Povinně volitelné předměty specializace 3. roč. LS	B	3	LS
