Politechnika Krakowska im. Tadeusza Kościuszki

Karta przedmiotu

obowiązuje studentów rozpoczynających studia w roku akademickim 2020/2021

Wydział Mechaniczny

Kierunek studiów: Mechanika i Budowa Maszyn — Profil: Ogólnoakademicki

Forma sudiów: stacjonarne — Kod kierunku: M

Stopień studiów: I

Specjalności: Computational Mechanics (Mechanika obliczeniowa- w języku angielskim)

1 Informacje o przedmiocie

Nazwa przedmiotu	Ethics of engineering profession
Nazwa przedmiotu w języku angielskim	
Kod przedmiotu	WM MIBM oIS A6 20/21
Kategoria przedmiotu	Przedmioty ogólne
Liczba punktów ECTS	1.00
Semestry	6

2 Rodzaj zajęć, liczba godzin w planie studiów

Semestr	Wykład	Ćwiczenia	Laboratorium	Laboratorium komputerowe	Projekt	Seminarium
6	0	15	0	0	0	0

3 Cele przedmiotu

Cel 1 Introduction of basic ethical concepts and ideas required for the understanding of social and nontechnological conditions and aspects of engineering.

Cel 2 Presentation of three main ethical theories: ethics of character, ethics of duty (deontology) and ethics of utility.

Cel 3 Presentation of the fundamental prinicples of engineering ethics and developing the competences of applying them to practical cases.

Cel 4 Developing the attitude of the proffesional responsibility and the awareness of social and human aspects of engineering

4 Wymagania wstępne w zakresie wiedzy, umiejętności i innych kompetencji

1 None

5 Efekty kształcenia

EK1 Wiedza A student explains the aims and methods of ethics, can define its main concepts and problems.

EK2 Wiedza A student can describe the assumptions, methods and results of the ethics of character, ethics of duty and ethics of social utility; can explain their sense in examples along with their importance for engineering ethcis.

EK3 Wiedza A student describes the main principles of engineering ethics and explains their meaning with relevant case studies. Explains the general method of analysis and the idea of responsiblity and responsible action.

EK4 Umiejętności A student can cary out an independant analysis of a case or a problem; can develop a valid argument and search for a right solution.

EK5 Kompetencje społeczne A student can actively take part in a discussion and identify appearing problems, can foresee the consequences, adopts the attitude of responsibility and can solve the problem.

6 Treści programowe

Ćwiczenia		
Lp	Tematyka zajęć Opis szczegółowy bloków tematycznych	Liczba godzin
C1	Introduction:the concepts of conscience, morality and ethics. The role of ethics in technology. The case of ford pinto and space shuttle Challenger. Ethics as a part of engineering knowledge. The new possibilities and the need of continuous normative process. Why individuall ethics is not sufficient? B. McCoye: "The Parable of Sadhu".	2
C2	The main principles of engineering ethics in the light of ethical codes. Theoretical concepts and analyses of cases. The model of human action. The principle of public safety in practice of designing, construing production and monitoring. Case studies: Tay bridge, Tacoma bridge and others.	2
C3	The principle of public safety in practice of designing and production. The disaster of the MTK Hall in Katowice. Could it be avoided? Selected disasters of aircrafts. Could they be avoided?	2
C4	Nuclear energy and safety. Czarnobyl disaster. Can a technical error cause a nuclear war? Safety at the working place. Case studies: the disaster in Halemba mine and others.	2

Ćwiczenia		
Lp	Tematyka zajęć Opis szczegółowy bloków tematycznych	Liczba godzin
C5	The principles of honesty in relation to eployer, clients and other sides. The case of asbestos and others. The principle of objectivity and autonomy in proffesional judgements. Case studies: Vajont dam.	2
C6	The principle of continuous professional developement. Proffesional development in the light of virtue ethics. Case studies and discussion: S. Jobs' speech, the career of a PK graduate. The case of jet landing in Hudson river. How to be a good lider? Engineer in the role of manager the principle of justice and respect for the dignity of workers. Three ideas of justice in engineering practice. Case studies: mobbing and lack of motivation.	2
C7	The principle of the care for the environment. The case of VW Diesel engines, The polution of the natural environment and ecological disasters. The principle of responsibility. Narrow and broad idea of responsibility. The conditions of responsible action; creativity in search for new solutions. Case studies.	2
C8	Deontological ethics and consequentialism. Discussion of selected cases. Presentation of cases and problems prepared by students.	1

7 Narzędzia dydaktyczne

N1 Wykłady

N2 Prezentacje multimedialne

N3 Dyskusja

N4 Narzędzie 4

8 Obciążenie pracą studenta

Forma aktywności	Średnia liczba godzin na zrealizowanie aktywności
Godziny kontaktowe z nauczycielem akademickim, w tym:	
Godziny wynikające z planu studiów	15
Konsultacje przedmiotowe	2
Egzaminy i zaliczenia w sesji	0
Godziny bez udziału nauczyciela akademickiego wynikające z nakładu pracy studenta, w tym:	
Przygotowanie się do zajęć, w tym studiowanie zalecanej literatury	6
Opracowanie wyników	0
Przygotowanie raportu, projektu, prezentacji, dyskusji	12
case study	10
Sumaryczna liczba godzin dla przedmiotu wynikająca z całego nakładu pracy studenta	**45**
Sumaryczna liczba punktów ECTS dla przedmiotu	1.00

9 Sposoby oceny

Ocena formująca

F1 Aktywnośc na zajęciach

Ocena podsumowująca

P1 Kolokwium

P2 Projekt

Warunki zaliczenia przedmiotu

W1 Aktywny udział w zajęciach, zaliczenie kolokwium i pracy pisemnej

Kryteria oceny

Efekt kształcenia 1	
Na ocenę 2.0	Student doesn't know basic concepts and methods of ethics.
Na ocenę 3.0	A student knows basic ethical concepts and methods

Na ocenę 3.5	A student knows basic ethical concepts and methods and can formulate the assumptions and results of each method.
Na ocenę 4.0	A student knows basic ethical concepts and methods and can formulate the assumptions and results of each method along with the relevant argument.
Na ocenę 4.5	A student knows basic ethical concepts and methods and can formulate the assumptions and results of each method along with the relevant argument, can illustrate and explain each them with a relevant case study.
Na ocenę 5.0	A student knows basic ethical concepts and methods and can formulate the assumptions and results of each method, can illustrate and explain each them with a relevant case study and use the methods in a creative way to the problems of the civilization and technology.
Efekt kształcenia 2	
Na ocenę 2.0	A student cannot explain the basic assumption of the ethics of character, deontology and ethics of social utility,
Na ocenę 3.0	A students knows assumptions, methods and results of the ethics of character, ethics of duty and ethics of utility
Na ocenę 3.5	A students knows assumptions, methods and results of the ethics of character, ethics of duty and ethics of utility and can explain their meaning with the cases selected by himself/herself.
Na ocenę 4.0	A students knows assumptions, methods and results of the ethics of character, ethics of duty and ethics of utility and can explain their meaning in all classic examples.
Na ocenę 4.5	A students knows assumptions, methods and results of the ethics of character, ethics of duty and ethics of utility and can explain their meaning in all classic examples; can identify social, human and other nontechnological conditions and aspects of contemporary civilization
Na ocenę 5.0	A students knows assumptions, methods and results of the ethics of character, ethics of duty and ethics of utility.and can explain their meaning in all classic examples; can identify social, human and other nontechnological conditions and aspects of contemporary civilization, can creatively argue and search for new solutions of the problems
Efekt kształcenia 3	
Na ocenę 2.0	A student cannot explain the main principles of engineering ethics
Na ocenę 3.0	A student knows the main principles of engineering ethics, the general method of the analysis of cases and the idea of responsibility.
Na ocenę 3.5	A student knows the main principles of engineering ethics, the general method of the analysis of cases and the idea of responsibility and can explain their meaning in selected examples.

Na ocenę 4.0	A student knows the main principles of engineering ethics, the general method of the analysis of cases and the idea of responsibility and can explain their meaning in many examples.
Na ocenę 4.5	A student knows the main principles of engineering ethics, the general method of the analysis of cases and the idea of responsibility, and can explain their meaning in many examples including unsual and controversial cases.
Na ocenę 5.0	A student knows the main principles of engineering ethics, the general method of the analysis of cases and the idea of responsibility and can explain their meaning in many examples including unusual and controversial cases, can argue in an creative and independenet way.
Efekt kształcenia 4	
Na ocenę 2.0	A student cannot cary out an analysis of a case or a problemin engineering ethics.
Na ocenę 3.0	A student can idependently cary out an analysis of a typical case or problem in the light of the principles.
Na ocenę 3.5	A student can idependently cary out an analysis of a typical case or problem in the light of the principles, can discuss and compare its possible solutions.
Na ocenę 4.0	A student can idependently cary out an analysis of a typical case or problem in the light of the principles, can discuss and compare its possible solutions, can defend his/her solution in a discussion
Na ocenę 4.5	A student can idependently cary out an analysis of a typical case or problem in the light of the principles can discuss and compare its possible solutions, can defend his/her solution in a discussion.
Na ocenę 5.0	A student can idependently cary out an analysis of a typical case or problem in the light of the principles, can discuss and compare its possible solutions, can defend his/her solution in a discussion, can take responsibility for its consequences and creatively search for a new solutions
Efekt kształcenia 5	
Na ocenę 2.0	A student is not able to take part in a discussion.
Na ocenę 3.0	A student rarely takes part in a discussion
Na ocenę 3.5	A student takes part in a discussion and identifies the problems of social, human and environmental aspects of technology.
Na ocenę 4.0	A student takes part in a discussion and identifies the problems of social, human and environmental aspects of technology and can present a corret argument
Na ocenę 4.5	A student takes part in a discussion and identifies the problems of social, human and environmental aspects of technology, can present a corret argument, foresees the consequences of his choices and takes responsibility for them.

Na ocenę 5.0	A student takes part in a discussion and identifies any of the problems of social, human and environmental aspects of technology, can present a corret argument in a creative way, foresees the direct and indirect consequences of his choices and takes responsibility for them.

10 Macierz realizacji przedmiotu

Efekt kształcenia	Odniesienie danego efektu do szczegółowych efektów zdefiniowanych dla programu	Cele przedmiotu	Treści programowe	Narzędzia dydaktyczne	Sposoby oceny
EK1		Cel 1	C1 C2 C3	N1 N2 N3	F1 P1 P2
EK2		Cel 2	C1 C2 C3 C4	N1 N2 N3 N4	F1 P1 P2
EK3		Cel 3	C3 C4 C5	N1 N2 N3 N4	F1 P1 P2
EK4		Cel 4	C5 C6	N1 N2 N3 N4	F1 P1
EK5		Cel 4	C5 C6	N1 N2 N3 N4	F1 P1 P2

11 Wykaz literatury

Literatura podstawowa

[1] M. Martin R Schinzinger — *Ethics in Engineeringł*, New York, 1996, McGraw_Hill Companies

[2] C. Harris, M. Protchard, M . Rabins — *Engineering Ethics*, Belmont, 2005, Wadsworth

Literatura uzupełniająca

[1] C.Fleddermann — *Engineering Ethics*, Upper Saddle River, NJ, 2008, Person Prentice Hall

12 Informacje o nauczycielach akademickich

Osoba odpowiedzialna za kartę

dr hab. Jacek, Andrzej Jaśtal (kontakt: jacek.jastal@pk.edu.pl)

Osoby prowadzące przedmiot

1 dr hab. Marek Pyka (kontakt: mpyka@pk.edu.pl)

13 Zatwierdzenie karty przedmiotu do realizacji

(miejscowość, data) (odpowiedzialny za przedmiot) (dziekan)

Przyjmuję do realizacji (data i podpisy osób prowadzących przedmiot)

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