

Decision Support Systems - opis przedmiotu

Informacje ogólne	
Nazwa przedmiotu	Decision Support Systems
Kod przedmiotu	06.9-WM-ZiIP-ANG-D-06_20
Wydział	Wydział Nauk Inżynieryjno-Technicznych
Kierunek	Management and Production Engineering
Profil	ogólnoakademicki
Rodzaj studiów	drugiego stopnia z tyt. magistra inżyniera
Semestr rozpoczęcia	semestr zimowy 2023/2024

Informacje o przedmiocie	
Semestr	1
Liczba punktów ECTS do zdobycia	3
Typ przedmiotu	obowiązkowy
Język nauczania	angielski
Sylabus opracował	<ul style="list-style-type: none">prof. dr hab. Taras Nahirnyymgr Karol Dąbrowskidr Katarzyna Skrzypek

Formy zajęć					
Forma zajęć	Liczba godzin w semestrze (stacjonarne)	Liczba godzin w tygodniu (stacjonarne)	Liczba godzin w semestrze (niestacjonarne)	Liczba godzin w tygodniu (niestacjonarne)	Forma zaliczenia
Projekt	15	1	-	-	Zaliczenie na ocenę
Wykład	15	1	-	-	Zaliczenie na ocenę

Cel przedmiotu

Acquisition of skills and competences in decision support system (DSS) and methods used in decision process analysis which are useful in further educational process and vocational work. Also knowledge and skills of chosen tools and technique used in decision support systems will be given.

Wymagania wstępne

Basic of computer science, probability, statistic

Zakres tematyczny

Lecture:

W1: Introduction to the theory of decision-making. Confidence, risk, uncertainty.

W2 - W3: Mathematical modeling and decisions, operations research models and econometric statistical decision theory, decision analysis, decision trees.

W4 - W5: The theory of reliability and usability and decision-making. The decisions in terms of inaccuracy. Game theory and the decisions, game double zero-sum and non-zero; importance of information, cooperative games; negotiations; distribution of payments in the coalition; balance, optimal strategies. Examples of applications in business practice.

W6 - W7: Decision Support Systems and Information Systems Management, Principles of creation and utilization systems.

Project. Development of the project in the field of production engineering issues, taking into account the theoretical basis and principles of the work program concerning:

- selection of probe items,
- forecasting and linear regression,
- allocation of resources and balancing production lines,
- serial work,
- linear programming, integer and 0-1,
- dynamic programming,
- stock management,
- PERT-CPM,
- modelling network,
- systems queuing,
- simulation of queuing systems
- economy materials

- quality control charts.

Metody kształcenia

Conventional lecture.

Project – individual work, group work with DSS systems, based on literature and the lecture notes

Efekty uczenia się i metody weryfikacji osiągnięcia efektów uczenia się

Opis efektu	Symbole efektów	Metody weryfikacji	Forma zajęć
Student has theoretical detailed knowledge of decision support systems.	<ul style="list-style-type: none">K_W04	<ul style="list-style-type: none">kolokwiumprojekt	<ul style="list-style-type: none">WykładProjekt
Student knows the basic methods and techniques used in decision support systems.	<ul style="list-style-type: none">K_W18	<ul style="list-style-type: none">kolokwiumprojekt	<ul style="list-style-type: none">WykładProjekt
The student can use to formulate and solve engineering tasks selected analytical methods and simulation	<ul style="list-style-type: none">K_U13	<ul style="list-style-type: none">obserwacje i ocena umiejętności praktycznych studentaprojekt	<ul style="list-style-type: none">Projekt
The student is able to formulate and test hypotheses, related to engineering problems and simple research problems.	<ul style="list-style-type: none">K_U19	<ul style="list-style-type: none">obserwacja i ocena aktywności na zajęciachprojekt	<ul style="list-style-type: none">WykładProjekt
Student is able to use information technologies relevant to the implementation of selected tasks of decision-making in business engineering	<ul style="list-style-type: none">K_U26	<ul style="list-style-type: none">obserwacje i ocena umiejętności praktycznych studentaprojekt	<ul style="list-style-type: none">Projekt
The student is able to design and manage mechanical engineering databases.	<ul style="list-style-type: none">K_U28	<ul style="list-style-type: none">bieżąca kontrola na zajęciach	<ul style="list-style-type: none">WykładProjekt
The student understands the need for learning	<ul style="list-style-type: none">K_K01	<ul style="list-style-type: none">aktywność w trakcie zajęć	<ul style="list-style-type: none">Projekt
The student is able to think and act in a creative and enterprising	<ul style="list-style-type: none">K_K06	<ul style="list-style-type: none">kolokwiumprojekt	<ul style="list-style-type: none">WykładProjekt

Warunki zaliczenia

Lecture: graded credit

The assessment is issued based on a written test covering the verification of the knowledge of basic problems.

Project: graded credit

The assessment is determined on the basis of the component evaluating skills related to the implementation of project tasks, the prepared report and a component for the student's "defence" of the report.

Literatura podstawowa

1. Taylor, James (2012). Decision Management Systems: A Practical Guide to Using Business Rules and Predictive Analytics. Boston MA: Pearson Education.
2. Burstein, Frada & Frada, & Holsapple, Clyde & Clide,. (2008). Handbook on Decision Support Systems 1: Basic Themes. 10.1007/978-3-540-48713-5.
3. Burstein, Frada & Frada, & Holsapple, Clyde & Clide,. (2008). Handbook on Decision Support Systems 2: Variations. 10.1007/978-3-540-48716-6.
4. Power, D. J. (2002). Decision support systems: concepts and resources for managers. Westport, Conn., Quorum Books.

Literatura uzupełniająca

1. Borges, J.G, Nordström, E.-M. Garcia Gonzalo, J. Hujala, T. Trasobares, A. (eds). (2014). " Computer-based tools for supporting forest management. The experience and the expertise world-wide. Dept of Forest Resource Management, Swedish University of Agricultural Sciences. Umeå. Sweden.
2. Delic, K.A., Douillet,L. and Dayal, U. (2001) "Towards an architecture for real-time decision support systems:challenges and solutions.

Uwagi

Zmodyfikowane przez dr Katarzyna Skrzypek (ostatnia modyfikacja: 19-04-2023 18:15)

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