

Quality Engineering - opis przedmiotu

Informacje ogólne	
Nazwa przedmiotu	Quality Engineering
Kod przedmiotu	06.1-WM-ER-MiBM-16_18
Wydział	Wydział Mechaniczny
Kierunek	WM - oferta ERASMUS
Profil	-
Rodzaj studiów	Program Erasmus
Semestr rozpoczęcia	semestr zimowy 2023/2024

Informacje o przedmiocie	
Semestr	2
Liczba punktów ECTS do zdobycia	3
Typ przedmiotu	obowiązkowy
Język nauczania	angielski
Sylabus opracował	dr inż. Edward Tertel

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
Wykład	15	1	-	-	Zaliczenie na ocenę
Laboratorium	15	1	-	-	Zaliczenie na ocenę

Cel przedmiotu

To acquaint students with the basic terms in the field of quality assurance and quality management. Knowledge of methods and the evaluation procedures of the quality evaluation of products, services and activities. Understanding the basic concepts of quality management. Acquaint with the ISO9000 quality standards, industry standards. Discussion of basic procedures for implementing and maintaining quality management systems.

Wymagania wstępne

Mathematics, Metrology, Elements of statistics, the ability to use fundamental IT-tools

Zakres tematyczny

Lecture content.

The concept of quality and its definitions. Fundamental factors affecting the quality of production processes. Aspects and criteria for evaluation of the quality. The concept of quality and its definitions. Fundamental factors affecting the process and quality of production processes. Aspects and criteria for evaluation of the quality. Reliability, reliability functions. Quality systems according to the ISO series of standards, ISO 9000: basics and terminology. Quality management according to the DIN EN ISO 9001. The quality system documents. The implementation of quality management systems. Quality of processes, quality of work, quality of products quality of service. TQM - Total Quality Management objectives, concept and implementation. Six sigma - quality management by measurement of efficiency. The basic principles of Six Sigma, the implementation of the system, the use of statistical methods. Selected quality management tools.

Laboratory content:

Evaluation of the quality of the selected product. Determination of the reliability function for selected devices. Mapping process flow for a given production task. Elements of QMS documentation in accordance with DIN EN ISO 9001 - discussion, comparative assessment. The use of selected quality management tools. Six sigma - determining of the Six Sigma quality measure for specific products/processes. Statistical Measures of Quality in the Six Sigma, setting short-term and long-term capability of the process.

Metody kształcenia

Lectures with audiovisual aids. Working with the books and journals.

Individual and group work in laboratory classes. Presentation of solutions, discussion of the obtained solutions.

Efekty uczenia się i metody weryfikacji osiągnięcia efektów uczenia się

Opis efektu	Symbole efektów	Metody weryfikacji	Forma zajęć
Is able to define basic concepts of quality of and quality management		- praca kontrolna - test z pytaniami zamkniętymi i otwartymi	Wykład

Opis efektu	Symbole efektów	Metody weryfikacji	Forma zajęć
He can name the standards of ISO9000 family of standards, and give a short description of their subject matter. Is able to characterize elements of the QMS documentation in accordance with ISO9001. Can apply the requirements of ISO9000 to create a quality management system documentation.		- praca kontrolna - test z pytaniami zamkniętymi i otwartymi	Wykład
He can carry out an evaluation of the quality of the product by choosing appropriate evaluation criteria. Properly interprets the results.		- obserwacja i ocena aktywności na zajęciach - wykonanie sprawozdań laboratoryjnych	Laboratorium
Can apply and implement the basic tools of quality management.		- obserwacja i ocena aktywności na zajęciach - wykonanie sprawozdań laboratoryjnych	Laboratorium
Is aware of the consequences, both good as well as poor quality of products and processes.		- obserwacja i ocena aktywności na zajęciach - wykonanie sprawozdań laboratoryjnych	Laboratorium
Is able to characterize the basic principles of quality management. Can describe the basic concepts of quality management, explain the basic differences and similarities.		- praca kontrolna - test z pytaniami zamkniętymi i otwartymi	Wykład

Warunki zaliczenia

Lecture: Assessment of of the course is determined on the basis of ratings for audit work (weight = 0.4) and test (weight = 0.6).

Assessment of the laboratory is based on: the laboratory exercises and reports/programs resulting from the execution of all exercises to be exercised.

To get a credit the student has to receive all passing grades.

The final grade received by the student is the arithmetic mean of the above grades.

Literatura podstawowa

1. Tadeusz Sałaciński: Quality Engineering in Manufacturing Technology, OW PW, 2020. (eBook)
2. Joseph M. Juran, A. Blanton Godfrey: JURAN'S QUALITY HANDBOOK, McGraw-Hill, 2010.
3. Nancy R. Tague: The Quality Toolbox, ASQ Qualiyy Press, 2005
4. Jiang Renyan: Introduction to Quality and Reliability Engineering, Springer Nature, 2015.

Literatura uzupełniająca

1. Gopal K Kanji, Mike Asher: 100 Methods for Total Quality Management, SAGE Publications Ltd, 1996.
2. <https://quality-one.com/quality-engineering/>
3. Standards: ISO 9000 - series.

Uwagi

Zmodyfikowane przez dr inż. Edward Tertel (ostatnia modyfikacja: 02-06-2023 12:12)

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