Advanced quality management techniques - opis przedmiotu

Informacje ogólne

Nazwa przedmiotu	Advanced quality management techniques
Kod przedmiotu	06.9-WM-ZiIP-IJ-ANG-D-17_17
Wydział	Wydział Mechaniczny
Kierunek	Management and Production Engineering
Profil	ogólnoakademicki
Rodzaj studiów	drugiego stopnia z tyt. magistra inżyniera
Semestr rozpoczęcia	semestr zimowy 2018/2019

Informacje o przedmiocie

Semestr	2
Liczba punktów ECTS do zdobycia	3
Typ przedmiotu	obowiązkowy
Język nauczania	angielski
Sylabus opracował	• mgr Karol Dąbrowski

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
Projekt	30	2	-	-	Zaliczenie na ocenę

Cel przedmiotu

The aim of the "**Advanced techniques of quality management**" course is to acquire knowledge and skills in planning and quality management in enterprises in which quality criteria are raised by industry standards, such as e.g. ISO TS 16949, VDA standards, HACCP and production systems, e.g. TPS. Students learn about advanced methods of quality management and decision analysis, as well as the modern measuring devices used in industrial plants. The subject prepares for work in the scope of building quality management systems in an enterprise, especially in the automotive, metal and food industry.

Wymagania wstępne

Quality and safety management, resource management of the enterprise, mathematical statistics, fundamentals of metrology, project management, strategic management

Zakres tematyczny

Lecture:

Quality management - introduction, review of standards and quality management systems - ISO standards:

- Lean Management - optimisation through the elimination of waste,
- Normative approach to quality management - ISO, VDA, HACCP standards,
- A systemic approach to quality management - Toyota Production System,
- Quality planning tools - APQP (Advanced Product Quality Planning), PPAP (Production Part Approval Process), Control Plan - construction, FMEA (Failure mode and effects analysis).

Quality management in production - built-in quality - modern devices supporting control:

- A comprehensive approach to building quality in the organisation - TQM,
- Statistical process control in mass production - SPC,
- Evaluation of measurement systems in the MSA process,
- Basic tools for quality assurance in the process - visualisation, standardisation, testing, Poka Yoke,
- Measuring machines and devices - simple measuring machines (callipers, micrometres), microscopes, endurance testing machines, co-ordinate measuring machines, 3D scanners, thermal imaging cameras.

Quality improvement tools and problem analysis:

- Problem solving tools - 5W2H analysis, 5xWhy analysis, cause and effect diagram (Ishikawa), flowcharts, analysis and planning for the implementation of remedial measures,
- Decision analysis - SMART, AHP,
- Effective project management, strategy building and lasting customer relations - CSR.

Project:

The project task is based on issues proposed by the lecturer or by the student. The aim of the project is to describe and correctly diagnose the research problem, present possible methods of solving it and, having proposed a specific method / technique, implementing it, for example, through simulations to the process. The project should contain a detailed procedure to get to the bottom of the problem by using problem-solving tools. Proposing several methods, comparing them and selecting the optimal one, then preparing a detailed description of the possible effects.

Metody kształcenia

Lecture: a conventional lecture

Project: a project implemented in groups or individually

Efekty uczenia się i metody weryfikacji osiągania efektów uczenia się

Opis efektu	Symbole efektów	Metody weryfikacji	Forma zajęć
The student has theoretical knowledge of some sectors of Management and Production Engineering, according to the speciality quality engineering.	• K_W07 • K_W15	• kolokwium	• Wykład
The student is able to obtain, integrate and interpret knowledge, draw conclusions and formulate opinions on the basis of catalogue entries issued by manufacturers of appliances, advertising material, information obtained from literature, databases and other modern means of communication. The student is able to both choose -and use- appropriate computer applications for calculating, simulating, designing and also verifying solutions. The student can use accepted methods and computer simulations to analyse and evaluate management systems.	• K_U04 • K_U11 • K_U16	• przygotowanie projektu	• Projekt
The student understands the importance of the non-technical aspects and effects of engineering, including their impact on the environment; the student is aware of the responsibilities resulting from decisions taken in this regard.	• K_K02	• projekt	• Projekt

Warunki zaliczenia

Lecture: passing the test

Project: passing the project

Final rating: the arithmetical mean of grades from individual classes.

Literatura podstawowa

1. Hamrol A., Grudowski P., Zymonik Z., Zarządzanie jakością i bezpieczeństwem, PWE, Warszawa, 2013.
2. Hamrol A., Zarządzanie jakością z przykładami, PWN, Warszawa, 2013.
3. Łunarski J., Zarządzanie jakością. Standardy i zasady, WNT, Warszawa, 2012.

Literatura uzupełniająca

1. Masaaki I., Gemba Kaizen, MT Biznes, Warszawa, 2006.
2. Liker J. K., Droga Toyoty. 14 zasad zarządzania wiodącej firmy produkcyjnej świata, MT Biznes, Warszawa, 2016.
3. Womack J. P., Jones D. T., Roos D., Maszyna, która zmieniła świat, Prodpress.com, Wrocław, 2008.

Uwagi

Zmodyfikowane przez dr inż. Tomasz Belica (ostatnia modyfikacja: 14-09-2018 13:03)