

## GDAŃSK UNIVERSITY

## Subject card

| Subject name and code                          | Quality Management, PG_00039960  |  |   |                                     |           |  |              |                 |
|--|--|--|---|-------------------------------------|-----------|--|--------------|-----------------|
| Field of study                                 | Management and Production Engineering, Management and Production Engineering                                       |  |   |                                     |           |  |              |                 |
| Date of commencement of studies                | October 2020   |  | Academic year of realisation of subject                       |                                     | 2022/2023 |  |              |                 |
| Education level                                | first-cycle studies  |  | Subject group   |                                     |           | Obligatory subject group in the<br>field of study<br>Subject group related to scientific<br>research in the field of study |              |                 |
| Mode of study                                  | Full-time studies  |  | Mode of delivery  |                                     |           | at the university  |              |                 |
| Year of study                                  | 3  |  | Language of instruction                                       |                                     |           | Polish   |              |                 |
| Semester of study                              | 5  |  | ECTS credits  |                                     | 3.0       |  |              |                 |
| Learning profile                               | general academic profile   |  | Assessment form   |                                     | exam      |  |              |                 |
| Conducting unit                                | Department of Manufacturing and Production Engineering -> Faculty of Mechanical Engineering and Ship<br>Technology |  |   |                                     |           |  |              |                 |
| Name and surname                               | Subject supervisor   |  | dr inż. Bogdan Ścibiorski                                     |                                     |           |  |              |                 |
| of lecturer (lecturers)                        | Teachers   |  | dr inż. Bogdan Ścibiorski<br>dr inż. Mieczysław Siemiątkowski |                                     |           |  |              |                 |
| Lesson types and methods of instruction        | Lesson type  | Lecture  | Tutorial  | Laboratory                          | Projec    | t  | Seminar      | SUM             |
|  | Number of study<br>hours   | 15.0   | 0.0   | 30.0                                | 15.0      |  | 0.0          | 60              |
|  | E-learning hours included: 0.0   |  |   |                                     |           |  |              |                 |
| Learning activity<br>and number of study hours | Learning activity  | Participation in didactic<br>classes included in study<br>plan |   | Participation in consultation hours |           | Self-study   |              | SUM             |
|  | Number of study<br>hours   | 60   |   | 5.0                                 |           | 10.0   |              | 75              |
| Subject objectives                             | The aim of the course management and the   | e is to provide v<br>requirements                              | with the issues of ISO 9000.                                  | of quality man                      | agemen    | t metho  | ds and tools | used in quality |

| Learning outcomes | Course outcome | Subject outcome   | Method of verification  |
|-------------------|----------------|---|---|
|                   | К6_К01         | The student defines the principles<br>of managing people in quality<br>systems. The student knows and<br>is able to apply the principles of<br>leadership and motivation. The<br>student understands the need to<br>update their knowledge and is<br>able to identify and use the<br>sources of knowledge. The<br>student knows the principles of<br>Continuing Improvement and the<br>benefits of skilful use of the<br>potential of human resources in<br>terms of creativity and innovation. | [SK5] Assessment of ability to<br>solve problems that arise in<br>practice<br>[SK3] Assessment of ability to<br>organize work<br>[SK1] Assessment of group work<br>skills<br>[SK4] Assessment of<br>communication skills, including<br>language correctness   |
|                   | K6_U01         | The student uses the basic tools<br>to diagnose quality problems.<br>Designs and analyzes control<br>cards, calculates and analyzes the<br>process quality capability<br>coefficients. Student classifies<br>methods and tools of quality<br>management. The student is able<br>to obtain information needed to<br>carry out tasks related to quality<br>management based on external<br>and internal sources of information.   | [SU2] Assessment of ability to<br>analyse information<br>[SU5] Assessment of ability to<br>present the results of task<br>[SU1] Assessment of task<br>fulfilment<br>[SU3] Assessment of ability to<br>use knowledge gained from the<br>subject<br>[SU4] Assessment of ability to<br>use methods and tools |
|                   | K6_W08         | He is able to influence employees<br>and managers, using the<br>knowledge of management and<br>quality engineering, taking into<br>account selected methods and<br>tools.   | [SW1] Assessment of factual<br>knowledge<br>[SW3] Assessment of knowledge<br>contained in written work and<br>projects  |

| Subject contents | Quality, its definitions, aspects and meaning. Other basic concepts The concept of TQM as the basis of management systems. Models of excellence as the basis of self-assessment of the organization. Industry quality systems, legal conditions of product quality. Quality system model according to ISO 9001. Structure. Requirements Process orientation in management systems. Basic tools for process evaluation and improvement. Control cards. Qualitative ability analysis. Acceptance inspection. Quality costs. Environmental management systems, occupational health and safety and information security management. Integration of management systems. |  |  |
|------------------|--|--|--|
|                  | Lectures:  |  |  |
|                  | 1. Quality Management Methods  |  |  |
|                  | 2. Quality Management Tools  |  |  |
|                  | 3. Quality Management Strategies   |  |  |
|                  | 4. Measuring devices   |  |  |
|                  | 5. Measurement analysis software   |  |  |
|                  | Laboratory:  |  |  |
|                  | 1. Control cards   |  |  |
|                  | 2. Descriptive statistics  |  |  |
|                  | 3. Ishikawa diagram  |  |  |
|                  | 4. Pareto diagram  |  |  |
|                  | 5. QFD method and its tools  |  |  |
|                  | 6. Selection of measuring tools  |  |  |
|                  | 7. Coordinate Measuring Machine part 1   |  |  |
|                  | 8. Coordinate Measuring Machine part 2   |  |  |
|                  | 9. SGP / GPS   |  |  |
|                  | Project:   |  |  |
|                  | 1. Characteristics of the company and the manufactured item  |  |  |
|                  | 2. Technological process (process map and production line layout)  |  |  |
|                  | 3. SMART quality policy and objectives   |  |  |
|                  | 4. Turtle diagram and systematics  |  |  |
|                  | 5. Reporting non-conformities  |  |  |

| Prerequisites<br>and co-requisites                             |   |   |                               |  |  |
|--|---|---|-------------------------------|--|--|
| Assessment methods   | Subject passing criteria  | Passing threshold   | Percentage of the final grade |  |  |
| and criteria   | Laboratory  | 60.0%   | 20.0%                         |  |  |
|  | Project   | 60.0%   | 40.0%                         |  |  |
|  | Lecture. Exam (written)   | 60.0%   | 40.0%                         |  |  |
| Recommended reading  | Basic literature  | 1. Notatki wykładowe materiały niepublikowane - dostępne w formie elektronicznej na stronie wykładowcy/eKursu.  |                               |  |  |
|  |   | <ol> <li>Hamrol A.: Zarządzanie i inżynieria jakości, PWN, Warszawa 2017</li> <li>Grudowski P., Przybylski W., Siemiątkowski M. (red. W. Przybylski)<br/>Inżynieria jakości w technologii maszyn, Wydawnictwo PG, 2006</li> </ol> |                               |  |  |
|  |   |   |                               |  |  |
|  |   | 4. Hamrol A. Mantura W. Zarządzanie jakością. Teoria i praktyk<br>PWN, Warszawa 2005  |                               |  |  |
|  |   | <ol> <li>Grudowski P. Projektowanie, nadzorowanie i doskonalenie syste<br/>jakości według normy PN-EN ISO 9001:2009 w oparciu o podejści<br/>procesowe, ODDK, Gdańsk 2010</li> </ol>  |                               |  |  |
|  | Supplementary literature         1. Hamrol A.: Zapewnienie jakości w procesach wytwarzania           Wydawnictwo Politechniki Poznańskiej, Poznań 1995. |   |                               |  |  |
|  |   | 2. Grudowski P. Jakość, środowisko i bhp w systemach zarządzania.<br>Bydgoszcz: Wydawnictwo OPO-AJG, 2004   |                               |  |  |
|  |   | <ol> <li>Muhlemann A. P., Oakland J. S., Lockyer K. G.: Zarządzanie.</li> <li>Produkcja i usługi, Wydawnictwo Naukowe PWN, Warszawa 1997</li> </ol>   |                               |  |  |
|  |   | 4. Bugdol, M.: System zarządzania jakością według normy ISO<br>9001:2015, Helion 2018,  |                               |  |  |
|  |   | 5. Hamrol A.: Strategie i praktyki sprawnego działania Lean, Six sigma i inne, PWN, Wyd. II, Warszawa 2018  |                               |  |  |
|  | eResources addresses  | Adresy na platformie eNauczanie:<br>Zarządzanie Jakością, W/P/L, ZiIP, sem. 05, zimowy 22/23 (M:<br>31824W0) - Moodle ID: 24027<br>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=24027                                   |                               |  |  |
| Example issues/<br>example questions/<br>tasks being completed | 1. Methods and tools of quality management  |   |                               |  |  |
|  | 2. Statistical process control  |   |                               |  |  |
|  | 3. Model of the quality system according to ISO 9001  |   |                               |  |  |
|  | 4. Receiving inspection   |   |                               |  |  |
| Work placement   | Not applicable  |   |                               |  |  |