



Subject card

| | | | | | | | |
|---|--|--|----------|-------------------------------------|--|------------|-----|
| Subject name and code | Software Quality, PG_00053909 | | | | | | |
| Field of study | Informatics | | | | | | |
| Date of commencement of studies | October 2021 | Academic year of realisation of subject | | | 2023/2024 | | |
| Education level | first-cycle studies | Subject group | | | Optional subject group Subject group related to scientific 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 | 6 | ECTS credits | | | 3.0 | | |
| Learning profile | general academic profile | Assessment form | | | exam | | |
| Conducting unit | Department of Computer Architecture -> Faculty of Electronics, Telecommunications and Informatics | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Jarosław Kuchta | | | | | |
| | Teachers | dr inż. Jarosław Kuchta dr inż. Adam Kaczmarek prof. dr hab. inż. Bogdan Wiszniewski | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 15.0 | 0.0 | 0.0 | 15.0 | 0.0 | 30 |
| | E-learning hours included: 0.0 | | | | | | |
| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | | Participation in consultation hours | | Self-study | SUM |
| | Number of study hours | 30 | | 2.0 | | 43.0 | 75 |
| Subject objectives | Know how to evaluate software quality and how to manage the quality in the software enterprise. | | | | | | |
| Learning outcomes | Course outcome | Subject outcome | | | Method of verification | | |
| | [K6_U01] can apply mathematical knowledge to formulate and solve complex and non-typical problems related to the field of study and perform tasks, in an innovative way, in not entirely predictable conditions, by:n- appropriate selection of sources and information obtained from them, assessment, critical analysis and synthesis of this information,n- selection and application of appropriate methods and toolsn | Is able to perform a qualitative assessment of selected design documents using appropriate metrics. | | | [SU2] Assessment of ability to analyse information | | |
| | [K6_U03] can design, according to required specifications, and make a simple device, facility, system or carry out a process, specific to the field of study, using suitable methods, techniques, tools and materials, following engineering standards and norms, applying technologies specific to the field of study and experience gained in the professional engineering environment | Is able to develop a specification of requirements for an IT system, taking into account quality requirements. | | | [SU1] Assessment of task fulfilment | | |

| Subject contents | <ol style="list-style-type: none"> 1. Software quality introduction 2. Quality in the software development process 3. Software quality models 4. Quality measurements. ISO 9126 quality metrics 5. CMM/CMMI maturity models 6. ISO 9001 quality management system 7. AHP - comparative quality evaluation by Saaty 8. GQM - metrics applied by goals 9. Quality in Agile Programming 10. Bugs, faults, errors and defects 11. Error models 12. Environment models 13. Program models 14. Testing levels 15. Black-box testing strategies 16. White-box testing strategies 17. Test documentation. IEEE standards. 18. Classes of test scenarios 19. Test-case life cycle 20. Structure and attributes of test cases 21. Test implementation methods | | | | | | | | | | | | | | |
|--|--|-------------------------------|--|--------------------------|---|-------------------------------|--------------------------|---|-------|----------------------|---|-------|--------------------------|-------|-------|
| Prerequisites and co-requisites | Software Engineering | | | | | | | | | | | | | | |
| Assessment methods and criteria | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Subject passing criteria</th> <th style="width: 33%;">Passing threshold</th> <th style="width: 34%;">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>Midterm colloquium</td> <td>50.0%</td> <td>25.0%</td> </tr> <tr> <td>Written exam</td> <td>50.0%</td> <td>25.0%</td> </tr> <tr> <td>Problem solving projects</td> <td>50.0%</td> <td>50.0%</td> </tr> </tbody> </table> | | | Subject passing criteria | Passing threshold | Percentage of the final grade | Midterm colloquium | 50.0% | 25.0% | Written exam | 50.0% | 25.0% | Problem solving projects | 50.0% | 50.0% |
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| Midterm colloquium | 50.0% | 25.0% | | | | | | | | | | | | | |
| Written exam | 50.0% | 25.0% | | | | | | | | | | | | | |
| Problem solving projects | 50.0% | 50.0% | | | | | | | | | | | | | |
| Recommended reading | <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 33%;">Basic literature</td> <td colspan="2" data-bbox="804 792 1489 1034"> <ol style="list-style-type: none"> 1. Pressman R., Software Engineering. A Practitioner"s Approach. McGraw-Hill, 2005 2. Górski J., Inżynieria oprogramowania w projekcie informatycznym. MIKOM, 2000 3. Bugzilla Documentation, Administrators & End Users: http://www.bugzilla.org/docs/ 4. Wiszniewski, B., Bogdan Bereza-Jarociński, B.: Teoria i praktyka testowania programów, PWN, 2006 5. Krawczyk H., Wiszniewski B.: Analysis and Testing of Distributed Software Applications, John Wiley & Sons, 1998. </td> </tr> <tr> <td>Supplementary literature</td> <td colspan="2" data-bbox="804 1043 1489 1137"> <ol style="list-style-type: none"> 1. Standard ISO/IEC 9001 2. Standard ISO/IEC 9126 3. Mark C. Paulk, Bill Curtis, Mary Beth Chrissis, Charles V. Weber: The Capability Maturity Model for Software </td> </tr> <tr> <td>eResources addresses</td> <td colspan="2" data-bbox="804 1146 1489 1232"> Adresy na platformie eNauczanie: Jakość Oprogramowania - 2023/24 - Moodle ID: 37354 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=37354 </td> </tr> </tbody> </table> | | | Basic literature | <ol style="list-style-type: none"> 1. Pressman R., Software Engineering. A Practitioner"s Approach. McGraw-Hill, 2005 2. Górski J., Inżynieria oprogramowania w projekcie informatycznym. MIKOM, 2000 3. Bugzilla Documentation, Administrators & End Users: http://www.bugzilla.org/docs/ 4. Wiszniewski, B., Bogdan Bereza-Jarociński, B.: Teoria i praktyka testowania programów, PWN, 2006 5. Krawczyk H., Wiszniewski B.: Analysis and Testing of Distributed Software Applications, John Wiley & Sons, 1998. | | Supplementary literature | <ol style="list-style-type: none"> 1. Standard ISO/IEC 9001 2. Standard ISO/IEC 9126 3. Mark C. Paulk, Bill Curtis, Mary Beth Chrissis, Charles V. Weber: The Capability Maturity Model for Software | | eResources addresses | Adresy na platformie eNauczanie: Jakość Oprogramowania - 2023/24 - Moodle ID: 37354 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=37354 | | | | |
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| Example issues/ example questions/ tasks being completed | | | | | | | | | | | | | | | |
| Work placement | Not applicable | | | | | | | | | | | | | | |