

## FACULTY OF ENGINEERING STUDY COURSE DESCRIPTION

|                                       |   |   |                       |                      |                               |
|---------------------------------------|---|---|-----------------------|----------------------|-------------------------------|
| <b>Course Title:</b>                  | <b>Web technologies and secure websites</b>   |   |                       |                      |                               |
| <b>Course code (LAIS):</b>            | <i>The course will be registered in the study administration system after accreditation</i>   |   |                       |                      |                               |
| <b>Study programme:</b>               | <b>Information technology</b>   |   |                       |                      |                               |
| <b>Level of Study programme:</b>      | <input checked="" type="checkbox"/>   | 1st level professional higher education                         |                       |                      |                               |
|                                       | <input checked="" type="checkbox"/>   | Professional Bachelor   |                       |                      |                               |
|                                       | <input type="checkbox"/>  | Professional Master   |                       |                      |                               |
|                                       | <input type="checkbox"/>  | Academic Master   |                       |                      |                               |
|                                       | <input type="checkbox"/>  | PhD level   |                       |                      |                               |
| <b>Type of Study programme:</b>       | <input checked="" type="checkbox"/>   | Compulsory course (Part A)                                      |                       |                      |                               |
|                                       | <input type="checkbox"/>  | Professional specialization courses (Part B, compulsory)        |                       |                      |                               |
|                                       | <input type="checkbox"/>  | Professional specialization optional courses (Part B, optional) |                       |                      |                               |
|                                       | <input type="checkbox"/>  | Elective courses (Part C)                                       |                       |                      |                               |
| <b>Course Workload:</b>               | <b>Credits</b>  | <b>ECTS</b>   | <b>Academic hours</b> | <b>Contact hours</b> | <b>Independent work hours</b> |
|                                       | 4   | 6   | 160                   | 64                   | 96                            |
| <b>Course Author/ Tutor:</b>          | <b>Maija Sedleniece</b>   |   |                       |                      |                               |
|                                       | Guest lecturer, Mg.Sc.Comp.   |   |                       |                      |                               |
|                                       | <u>e-mail</u> : maija.sedleniece@va.lv  |   |                       |                      |                               |
|                                       | Consultation: according to the schedule for each semester   |   |                       |                      |                               |
| <b>Study Form:</b>                    | Full time studies   |   |                       |                      |                               |
| <b>Study year, semester:</b>          | 2 <sup>nd</sup> study year, 2 <sup>nd</sup> semester/1 <sup>st</sup> study year, 2 <sup>nd</sup> semester   |   |                       |                      |                               |
| <b>Language:</b>                      | Latvian/English   |   |                       |                      |                               |
| <b>Prerequisites for the Course:</b>  |   |   |                       |                      |                               |
| <b>Course Summary:</b>                | The purpose of the study course is to introduce students with Web technologies and give them practical skills in creating web pages using HTML, JavaScript, PHP and MySQL database as well as content management systems.   |   |                       |                      |                               |
|                                       | During the study course, an understanding of the operating principles of programming frameworks (vue.js or others) and the advantages of using a content management system (Drupal or others) in the implementation of various projects is also provided.   |   |                       |                      |                               |
| <b>Assessment:</b>                    | Exam  |   |                       |                      |                               |
|                                       | Independent study of literature on lecture topics, practical works, group work - practical realization of the project, presentation of group work.  |   |                       |                      |                               |
| <b>Requirements for Credits:</b>      | <ol style="list-style-type: none"> <li>1. All practical works must be submitted within the specified deadlines.</li> <li>2. Must receive a positive evaluation for group work-project.</li> <li>3. Must pass the exam.</li> </ol>   |   |                       |                      |                               |
|                                       | The final assessment consists of: <ul style="list-style-type: none"> <li>• Active participation in lectures and practical work – 5%</li> <li>• Individual assessment in practical works - 50%</li> <li>• Practical implementation and presentation of group work - 30%</li> <li>• Exam - 15%</li> </ul>   |   |                       |                      |                               |
| <b>Abiding by the Academic Ethics</b> | Students must abide by the academic and research ethics, Vidzeme University of Applied Sciences Ethics Regulations, incl.: <ul style="list-style-type: none"> <li>– study papers must be independently developed;</li> <li>– the study work should reference all statements, ideas and data used that have been authored by someone else;</li> <li>– appropriate data acquisition methods should be used in the acquisition of data, the research ethics must be respected, empirical data must be collected independently and cannot be distorted or falsified;</li> </ul> |   |                       |                      |                               |

|  | <p>– the examination must be carried out by the student independently, without the use of supporting materials and/or consultations with other students, unless the lecturer states otherwise.</p> <p>In the event of non-compliance with the academic and research ethics, punishment is imposed in accordance with the ViA Ethics Regulations and the study course must be re-taken, unless the punishment is exmatriculation.</p>   |                                     |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
|--|--|-------------------------------------|-------------------------------------|------------------|--|---|-----------------------|--|-----------------|---------------|--|--|---------------------------|--|----------------|-------------------|--|--|---------------------------|--|----------------------|
| <b>Learning Outcomes; the evaluation methods and criteria</b>            | <table border="1"> <thead> <tr> <th>Learning Outcomes</th> <th>The evaluation methods and criteria</th> </tr> </thead> <tbody> <tr> <td colspan="2"><b>Knowledge</b></td> </tr> <tr> <td>Understanding the world wide web architecture</td> <td>Tests/Practical works</td> </tr> <tr> <td>Understanding of the use and application of various web technology tools</td> <td>Practical works</td> </tr> <tr> <td colspan="2"><b>Skills</b></td> </tr> <tr> <td>Able to independently develop websites using an open source content management system (Drupal or other), HTML, CSS, Bootstrap, Javascript, PHP, MySQL.</td> <td>Practical work/Group work</td> </tr> <tr> <td>Can use the vue.js framework in the development of web solutions</td> <td>Practical work</td> </tr> <tr> <td colspan="2"><b>Competency</b></td> </tr> <tr> <td>Able to independently apply various web technology development tools</td> <td>Practical work/Group work</td> </tr> <tr> <td>Able to analyze and navigate the application of various web technologies</td> <td>Tests/Practical work</td> </tr> </tbody> </table> | Learning Outcomes                   | The evaluation methods and criteria | <b>Knowledge</b> |  | Understanding the world wide web architecture | Tests/Practical works | Understanding of the use and application of various web technology tools | Practical works | <b>Skills</b> |  | Able to independently develop websites using an open source content management system (Drupal or other), HTML, CSS, Bootstrap, Javascript, PHP, MySQL. | Practical work/Group work | Can use the vue.js framework in the development of web solutions | Practical work | <b>Competency</b> |  | Able to independently apply various web technology development tools | Practical work/Group work | Able to analyze and navigate the application of various web technologies | Tests/Practical work |
|  | Learning Outcomes  | The evaluation methods and criteria |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
|  | <b>Knowledge</b>   |                                     |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
|  | Understanding the world wide web architecture  | Tests/Practical works               |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
|  | Understanding of the use and application of various web technology tools   | Practical works                     |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
|  | <b>Skills</b>  |                                     |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
|  | Able to independently develop websites using an open source content management system (Drupal or other), HTML, CSS, Bootstrap, Javascript, PHP, MySQL.   | Practical work/Group work           |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
|  | Can use the vue.js framework in the development of web solutions   | Practical work                      |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
|  | <b>Competency</b>  |                                     |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
|  | Able to independently apply various web technology development tools   | Practical work/Group work           |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
| Able to analyze and navigate the application of various web technologies | Tests/Practical work   |                                     |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
| <b>Course Compulsory literature:</b>                                     | <a href="https://www.w3schools.com/html/default.asp">https://www.w3schools.com/html/default.asp</a><br><a href="https://www.w3schools.com/css/default.asp">https://www.w3schools.com/css/default.asp</a><br><a href="https://www.w3schools.com/bootstrap4/default.asp">https://www.w3schools.com/bootstrap4/default.asp</a><br><a href="https://www.w3schools.com/php/default.asp">https://www.w3schools.com/php/default.asp</a><br><a href="http://www.php.net/">http://www.php.net/</a><br><a href="https://vuejs.org/">https://vuejs.org/</a><br><a href="https://www.drupal.org/">https://www.drupal.org/</a>  |                                     |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
| <b>Course additional literature:</b>                                     | <a href="https://www.w3.org/Style/CSS/http://www.w3.org/XML/">https://www.w3.org/Style/CSS/http://www.w3.org/XML/</a><br><a href="http://www.webreference.com/javascript/reference/core/index.html">http://www.webreference.com/javascript/reference/core/index.html</a><br><a href="http://www.php.net/">http://www.php.net/</a><br><a href="https://www.mysql.com/">https://www.mysql.com/</a><br><a href="https://www.wpbeginner.com/glossary/content-management-system-cms/">https://www.wpbeginner.com/glossary/content-management-system-cms/</a>  |                                     |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
| <b>Course confirmation date:</b>   | 08.12.2022   |                                     |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |
| <b>Date of course description update:</b>                                |  |                                     |                                     |                  |  |   |                       |  |                 |               |  |  |                           |  |                |                   |  |  |                           |  |                      |

### Study Course Plan:

| Date                                    | Theme  | Academic hours |                        | Study Form/<br>Organization of<br>independent work of<br>students and task<br>description |
|---|--|----------------|------------------------|---|
|   |  | Contact hours  | Independent work hours |   |
| <i>The date is specified before the</i> | Introduction to Internet and Web Technologies. Website Development - Content Management Systems, | 4              | 4                      | Lectures/ Practical work  |

|                                     |   |           |           |                                       |
|-------------------------------------|---|-----------|-----------|---------------------------------------|
| <i>implementation of the course</i> | Introduction to HTML and CSS  |           |           |                                       |
|                                     | Design. Bootstrap framework   | 4         | 4         | Lectures/ Practical work              |
|                                     | Introduction to PHP   | 4         | 6         | Lectures/ Practical work              |
|                                     | Practical use of PHP. Creating dynamic input forms.                       | 4         | 6         | Lectures/ Practical work              |
|                                     | PHP and DB collaboration. Programming frameworks. Safety.                 | 4         | 6         | Lectures/ Practical work              |
|                                     | Sessions. File upload. Comparison of input forms and existing data in DB. | 4         | 6         | Lectures/ Practical work              |
|                                     | PHP cookies   | 4         | 4         | Lectures/ Practical work              |
|                                     | Using Javascript in the development of web solutions.                     | 4         | 6         | Lectures/ Practical work              |
|                                     | AJAX, XML vs JSON, Vue.js framework                                       | 6         | 6         | Lectures/ Practical work              |
|                                     | Domain registrar. Good practice in programming. Insight into KeystoneJS   | 4         | 6         | Lectures/ Practical work              |
|                                     | Drupal content creation and management                                    | 4         | 4         | Lectures/ Practical work              |
|                                     | Drupal site configuration   | 4         | 4         | Lectures/ Practical work              |
|                                     | Using paragraphs in the Drupal content management system                  | 4         | 4         | Lectures/ Practical work              |
|                                     | Drupal language support   | 4         | 4         | Lectures/ Practical work              |
|                                     | Developing and defending group work                                       | 4         | 24        | Practical group work and presentation |
|                                     | Exam  | 2         | 2         | Test                                  |
|                                     | <b>Hours total:</b>   | <b>64</b> | <b>96</b> |                                       |