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| <b>Module name</b>                                  | <b>M2: Essential Oil Research</b>   |                         |                              |   |
| <b>Module level</b>                                 | 1   |                         |                              |   |
| <b>Code</b>   | M1  |                         |                              |   |
| <b>Semester</b>                                     | 1, 2  |                         |                              |   |
| <b>Person responsible for module</b>                | Head of Study Program   |                         |                              |   |
| <b>Courses</b>                                      | Synthesis of Essential Oils and Derivatives (3 credits)<br>Organic reaction mechanism (2 credits)<br>Characterization of Essential Oils (3 credits)<br><br><b>Elective: (minimum 4 credits)</b><br>Process of the Essential Oil Industry<br>Perfume, Flavor and Aroma Therapy<br>Bioactivity of essential oils<br>Essential oils for edible coatings<br>Essential oils for pest control<br>Process of the Essential Oil Industry<br>Essential oils for edible coatings<br>Essential oils for pest control |                         |                              |   |
| <b>Lecturer</b>                                     | Prof. Riyanto, Ph.D.<br>Dr. Tatang Shabur Julianto<br>Dr. Noor Fitri<br>Dr. Dwiwarso Rubiyanto  |                         |                              |   |
| <b>Language</b>                                     | Indonesia   |                         |                              |   |
| <b>Relation to curriculum</b>                       | Compulsory  |                         |                              |   |
| <b>Type of teaching and learning</b>                | Class size  | Attendance per week (h) | Form of active participation | Workload  |
| <b>Teaching, discussion, task</b>                   | 70 meetings   | 2 – 3                   | Discussion, writing, tasks   | Lecture: 140-150 h<br>Writing task: 280-300 h<br><br>= 16.67 ECTS |
| <b>Total workload</b>                               | Lecture (class): 96-120 h • Total Structured activities: Writing, presentation, and discussion task: 192-200 h • Exam: 10 times (depending on the kind of examination and evaluation system)  |                         |                              |   |
| <b>Prerequisite</b>                                 | None  |                         |                              |   |
| <b>Related course</b>                               | Further specific major courses  |                         |                              |   |
| <b>Module objectives/intended learning outcomes</b> | The module objectives are related with the strengthening theory and perspective for development of essential oil research and technology.   |                         |                              |   |

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| <b>Content</b>               | The contents are related to the production, design, analysis, physicochemical analysis, formulation and applicability of essential oil in industrial scale. Advance in essential oil development. |
| <b>Study and examination</b> | Writing, presentation, project tasks  |
| <b>Media employed</b>        | Online, offline; Youtube; and all related online courses  |