Module Descriptions

A **module** is a self-contained **learning unit** within a higher education program that includes thematically related courses and is assigned a **fixed number of credits**. It follows specific **learning objectives**, includes an **assessment component**, and contributes to achieving the qualifications of a degree program. In some countries, “modules” are also named “courses”.

Please provide a module description for each module. In addition to the compulsory and elective modules, this also includes credited internships and the final thesis.

Please summarize all module descriptions in one document (Module Handbook) and create a table of contents so that the modules can be found easily.

Module designation	*Determination of the structure of organic compounds (MPK6243)*
Semester(s) in which the module is taught	4
Person responsible for the module	*Prof. Dr. Sri Atun*
Language	*Indonesia*
Relation to curriculum	*Compulsory ~~/ elective / specialisation~~*
Teaching methods	*Lecture, discussion, project*
Workload (incl. contact hours, self-study hours)	Total workload of the activity is 91 hours per semester for 16 weeks which consist of*:* *100 minutes/week for class learning* *120 minutes/week for structured activities* *120 minutes/week for individual study*
Credit points	*2 sks (3.2 ECTS)*
Required and recommended prerequisites for joining the module	*Basic organic*

<table>
<tr><td>Module objectives/intended learning outcomes</td><td>On successful completion of the course students should be able to:
1. Explain the basic concepts of spectroscopy.
2 Explaining the basic concepts and methods of UV-VIS structural analysis and analyzing UV-VIS spectroscopy data.
3 . Explains the basic concepts and methods of IR structural analysis, analyzing IR spectroscopy data.
4. Explaining the basic concepts and methods of MS structural analysis, analyzing MS spectroscopy data
5. Explaining the basic concepts and methods of structural analysis using ^{1}H-NMR, analyzing ^{1}H-NMR spectroscopy data.
6. Explaining the basic concepts and methods of structural analysis by 13C-NMR, analyzing 13C-NMR spectroscopy data.
7. Explains structural analysis methods using UV, IR, NMR, and MS spectroscopy data.</td></tr>
<tr><td>Content</td><td>- Basic concepts of spectroscopy
- UV-VIS Spectroscopy
- IR Spectroscopy
- MS Spectroscopy
- Spektroskopi ^{1}H-NMR
- 13C –NMR spectroscopy
- Spectroscopic elucidation of organic compound structures based on UV, IR, NMR, and MS data</td></tr>
<tr><td>Examination forms</td><td>Essay, project report and presentation, written tests</td></tr>
<tr><td>Study and examination requirements</td><td>Minimum attendance at lectures is 75% and lab work is 100%
Final score (NA) is calculated as follows:
<table>
<tr><th>Learning Outcome</th><th>Weight (%)</th><th>Technique of Assesment</th></tr>
<tr><td>1</td><td>5</td><td>Participation</td></tr>
<tr><td>1</td><td>5</td><td>Quizz/ Task</td></tr>
<tr><td>3</td><td>50</td><td>Project</td></tr>
<tr><td>4</td><td>20</td><td>Mid-term Written Test</td></tr>
<tr><td>5</td><td>20</td><td>Final Exam Written Test</td></tr>
</table></td></tr>
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Reading list	- Sri Atun, Elusidasi Struktur Senyawa Organik, 2016, Yogyakarta, UNY Press - Donald L. Pavia, dkk , Introduction to Spectroscopy, Brooks/Cole, US - Lambert. J. B,(1998), Organic structural spectroscopy, Prentice Hall, New Jersey. - Silverstein R.M., (1997), Spectrometric identification of Organic Compounds, sixth ed.John, Wiley & Sons, New York - Sri Atun, Retno Arianingrum, Nurfina aznam (2013), Isolation and antimutagenic activity of some flavanon compounds from Kaemferia rotunda, *International Jurnal of chemical and analytical science* , 4, p 3-8 - Sri Atun, Retno Arianingrum, Nurfina aznam, (2016), Isolation of Sesquiterpenes Lactone from Curcuma aeruginosa Rhizome and the Cytotoxic ActivityAgainst Human Cancer Cell Lines, *International Journal of Pharmacognosy and Phytochemical Research*, 8(7); 1168-1172 - *Potential Bioactive Compounds Isolated from Boesenbergia rotunda as Antioxidant and Antimicrobial Agents, Pharmacogn J. 2018; 10(1): 73-78* - *Phytochemical and antioxidant evaluation of ethanol extract leaves of dendrophthoe falcata (loranthaceae) hemiparasitic on melia azedarach host tree, J.Phys.: Conf. Ser. 2019; 1156 012011* - *Characterization of Curcuminoid from Curcuma xanthorrhiza and Its Activity Test as Antioxidant and Antibacterial, Molekul, 2020; 15 (2): 79-87.*

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