

MODULE HANDBOOK

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| Module Name | Analytical Chemistry IV: Spectroscopy and Chromatography Method | |
| Module level | Bachelor | |
| Abbreviation, if applicable | 3074212041 | |
| Sub-heading, if applicable | - | |
| Course included in the module, if applicable | - | |
| Semester/term | 1 st /First Year | |
| Module coordinator(s) | Dr. Nita Kusumawati, M.Sc. | |
| Lecturer(s) | 1. Dr. Pirim Setiarso, M.Si; 2. Dr. Maria Monica Sianita, M.Si; 3. Prof. Dr. Titik Taufikurohmah, M.Si. | |
| Language | Indonesian | |
| Classification within the curriculum | Compulsory Course | |
| Teaching format/class hours per week during the semester: | 3 hours lecturers (50 min per hours) | |
| Workload: | Total workload 126 hours per semester which consists of 3 hours lecture, 3 hours structured activities, 3 hours individual activities, and 14 weeks per a semester (4.2 ECTS) | |
| Credit points: | 3 SCU | |
| Prerequisites course(s): | - | |
| Targeted learning outcomes: | CLO 1 CLO 2 CLO 3 CLO 4 | Students have knowledge of chemical analysis qualitatively and quantitatively in terms of chemical structure, energetics and analysis based on the working principles of several spectrophotometer and chromatography instruments. Students have the ability to collaborate and are responsible for conducting qualitative and quantitative chemical analysis on several Spectrophotometer and Chromatography instruments. Students have the skills to use the Spectrophotometer and Chromatography |

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| | | <p>instruments in conducting chemical analysis qualitatively and quantitatively.</p> <p>Students have the ability to communicate the results of chemical analysis qualitatively and quantitatively on several Spectrophotometer and Chromatography instruments.</p> |
| Content: | <p>Introduction of spectrometry and chromatography method</p> <p>Spectrophotometry UV & UV-Vis</p> <p>Atomic Absorption & Fluorescence Spectrometry</p> <p>Infra-red Spectrophotometry</p> <p>NMR Spectrophotometry</p> <p>Mass Spectrophotometry</p> <p>GC & HPLC</p> | |
| Study / exam achievements: | <p>Students are considered to be competent and pass if at least get 55</p> <p>Final score is calculated as follows: 20% participation + 30% assignment + 20% middle exam (UTS) & 30% final exam (UAS)</p> | |

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| | <p>Table index of graduation</p> <ul style="list-style-type: none"> • A = 4 (85 - 100) • A- = 3,75 (80 - 85) • B+ = 3,5 (75 - 80) • B = 3 (70 - 75) • B- = 2,75 (65 - 75) • C+ = 2,5 (60 - 65) • C = 2 (55 - 60) • D = 1 (40 - 55) • E = 0 (0 - 40) | |
| Media: | Computer, LCD, White board | |
| Learning Methods | Individuals assignment, group assignment, discussion, presentation, and practicum | |
| Literature: | <ol style="list-style-type: none"> 1. Harvey, D. 2000. <i>Modern Analytical Chemistry</i>. Int. Ed. Singapore: Mc.Graw Hill 2. Sawyer, Heineman, and Beebe, 1984, <i>Chemistry Experiments for Instrumental Methods</i>, New York : John Wiley & Sons 3. Ewing G.W, 1981, <i>Instrumental Methods Of Chemical Analysis</i>, International | 5. |

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| | <p>Student Edition, Tokyo: McGraw-Hill Kogakusha Ltd</p> <p>4. Skoog, D.A,1980, <i>Principles Of Instrumental Analysis</i>,ed II, Tokyo: Holt- Sounders Japan</p> | |
| Note | <p>Spectroscopy and Chromatography Method covers the activities of theory, practicum and presentation. Total ECTS = ((total hours workload x 50 min)/60 min)/25 hours Each ECTS is equals wits 25 hours</p> | |