

## Module Handbook

Module Name:	Phyto chemistry methods
Module Level:	Bachelor
Abbreviation, if applicable:	KIO402
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/term:	Odd (5 <sup>th</sup> semester)
Module coordinator(s):	MKWU Teaching Staff
Lecturer(s):	MKWU Teaching Staff
Language:	Bahasa Indonesia
Classification within the curriculum	<del>Compulsory Course</del> / Elective Studies
Teaching format / class hours per week during semester:	300 minutes/ week
Workload:	100 min lecture + 100 min structural assignment + 100 min self-assignment x 13 weeks; total 3900 min = 65 hours 65/25 = 2.6 ECTS
Credit Points:	1
Requirements:	-
Learning goals/competencies:	<p><b>General Competence (Knowledge)</b> Students are able to compare the distribution, isolation and identification of secondary metabolites in the plant properly</p> <p><b>Specific Competence:</b></p> <ol style="list-style-type: none"> <li>1. Able to explain the plant materials used and chemotaxonomy</li> <li>2. Able to explain the screening methods of secondary metabolites</li> <li>3. Able to compare the extraction, separation, and purification and various classes in secondary metabolites</li> <li>4. Able to compare identification in secondary metabolites</li> <li>5. Able to explain the correlation between structures of the isolation compounds with bioactivity test will be applied.</li> </ol>
Content:	Plant materials; screening of phytochemical; extraction, separation and purification; identification product of isolation based on physicochemical and spectroscopy; bio-activation the product of the isolation
Attribute soft skill	Discipline and argumentation
Study/exam achievements:	Students are considered to be competent and pass if at least get 40 of maximum mark of the exams (UTS and UAS), structured activity (group discussion). Final score (NA) is calculated as follow: 20% Paper project + 10% quiz + 30% mid exam + 30% final exam + 10% soft skill Final index is defined as follow: A : 75 – 100 AB : 70 - 74.99 B : 65 - 69.99

	BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99
Forms of Media:	Slides and LCD projectors, whiteboards
Learning Methods	Class and discussion
Literature	a. Chavanne, M.Jullien,A., 1991, <i>Chimie Organique Experimentale</i> , 2 <sup>e</sup> edition, Modulo Editeur, Cuebec, Canada b. Harborne, J.B., 1982, <i>Phytochemical Methods</i> , 2 <sup>nd</sup> Ed., Chapman and Hall, London c. Harborne, J.B., 1983, <i>The Flavonoids, Advances in Research Since 1986</i> , 1 <sup>st</sup> Ed., Chapman and Hall, London d. Ikan, R., 1969, <i>Natural Product: A Laboratory Guide</i> , Academic Press, London e. Santa, J.I.G.P., 1980, <i>Taksonomi Tumbuhan Farnakognosi Dasar, Diktat</i> , Fakultas Farmasi Universitas Airlangga Surabaya f. Jurnal-jurnal Internasional: <i>Phytochemistry, Journal of Natural Product, Planta Medica</i>
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