



MODULE HANDBOOK

Curriculum 2013 - 2018



IPB University
— Bogor Indonesia —

**Study Program of Agronomy and Horticulture
Department of Agronomy and Horticulture
Faculty of Agriculture
IPB University**

ABBREVIATION/CODE OF LECTURER NAME

| NO | ABBREVIATION/CODE | LIST OF LECTURER |
|-----------|--------------------------|--|
| 1 | AQA | Dr Ir Abdul Qadir, MS |
| 2 | AWA | Dr Ir Ade Wachjar, MS |
| 3 | APL | Ir Adolf Pieter Lontoh, MS |
| 4 | APU | Prof Dr Ir Agus Purwito, M.ScMAgr |
| 5 | AJU | Dr Ir Ahmad Junaedi, M.Si |
| 6 | AZA | Ahmad Zamzami, SP. M.SI |
| 7 | ADS | Prof. Dr Ir Anas D. Susila, M.Si |
| 8 | AER | Ir Andri Ernawati, M.AgrSC |
| 9 | ANI | Anggi Nindita, SP, M.Si |
| 10 | AKU | Dr Ani Kurniawati, SP, M.Si |
| 11 | AWR | Arya Widura Ritonga, SP.M.SI |
| 12 | ASE | Dr Ir Asep Setiawan, MS |
| 13 | AMA | Dr Awang Maharijaya, SP, M.Si |
| 14 | BSP | Prof. Dr Ir Bambang Sapta Purwoko, M.Sc |
| 15 | BWI | Ir Baran Wirawan, M.Sc |
| 16 | CBU | Candra Budiman, SP, M.Si |
| 17 | DEF | Dr Ir Darda Efendi, M.Si |
| 18 | DDM | Deden Derajat Matra, SP. M.Agr. |
| 19 | DWI | Dr Desta Wirnas, SP., M.Si |
| 20 | DSU | Dr Dewi Sukma, SP., M.Si |
| 21 | DSO | Prof. Dr Ir Didy Sopandie, M.Agr |
| 22 | DDI | Dr Ir Diny Dinarti, M.Si |
| 23 | DGU | Dr Dwi Guntoro, SP, M.Si |
| 24 | ESA | Prof Dr Edi Santosa, SP., M.Si |
| 25 | ESU | Dr Ir Eko Sulistyono, M.Si |
| 26 | ERP | Dr Ir Endah Retno Palupi, M.Sc |
| 27 | EWI | Dr Ir Eny Widajati, MS |
| 28 | HFU | Hafith Furqoni, SP. M.SI |
| 29 | HAS | Dr Ir Hajrial Aswidinoor, M.Sc |
| 30 | HAR | Dr Ir Hariyadi, MS |
| 31 | HPU | Dr Ir Heni Purnamawati, MS |
| 32 | HAG | Dr Ir Herdhata Agusta |
| 33 | ILU | Dr Ir Iskandar Lubis, MS |
| 34 | JGK | Juang Gema Kartika, SP, M.Si |
| 35 | KSU | Dr Ir Ketty Suketi, M.Si |
| 36 | KRI | Dr Ir Krisantini, M.Sc |
| 37 | MHB | Prof. Dr Ir M. Hasjim Bintoro, M.Agr |
| 38 | MRS | Dr Ir M. Rahmad Suhartanto, M.Si |
| 39 | MSA | Maryati Sari, SP, M.Si |
| 40 | MME | Dr Ir Maya Melati, MS., M.Sc. |
| 41 | MSR | Dr Ir Megayani Sri Rahayu, MS |

| NO | ABBREVIATION/CODE | LIST OF LECTURER |
|----|-------------------|--|
| 42 | MSU | Prof. Dr Ir Memen Surahman, M.ScAgr |
| 43 | MAC | Prof. Dr Ir Muhamad Achmad Chozin, M.Agr |
| 44 | MSY | Prof. Dr Muhamad Syukur, SP, M.Si |
| 45 | MGH | Prof. Dr Ir Munif Ghulamahdi, MS |
| 46 | NMA | Dr Ir Ni Made Armini Wiendi, MS |
| 47 | NKH | Dr Ir Nurul Khumaida, M.Si |
| 48 | PUR | Dr Ir Purwono, MS |
| 49 | RPO | Prof. Dr Ir Roedhy Poerwanto, M.Sc |
| 50 | SAA | Prof. Dr Ir Sandra Arifin Aziz, MS |
| 51 | SIL | Prof. Dr Ir Satriyas Ilyas, MS |
| 52 | SAM | Shandra Amarillis, SP. M.SI |
| 53 | SWA | Dr Sintho Wahyuning Ardie, SP, M.Si |
| 54 | SMA | Siti Marwiyah, SP. Msi |
| 55 | SSU | Prof. Dr Ir Slamet Susanto, M.Sc |
| 56 | SOB | Prof. Dr Ir Sobir, M.Si |
| 57 | SZA | Ir Sofyan Zaman, M.P. |
| 58 | SUA | Prof. Dr Ir Sudarsono, M.Sc |
| 59 | SYA | Prof. Dr Ir Sudirman Yahya, M.Sc |
| 60 | SUD | Prof Dr Ir Sudradjat, MS |
| 61 | SUG | Dr Ir Sugiyanta, M.Si |
| 62 | SUP | Dr Ir Supijatno, M.Si |
| 63 | SHS | Prof. Dr Ir Surjono Hadi Sutjahjo, MS |
| 64 | SUW | Dr Ir Suwanto, M.Si |
| 65 | SIA | Dr Ir Syarifah Iis Aisyah, M.ScAgr |
| 66 | TKS | Dr Tatiek Kartika Suharsi, MS |
| 67 | TKO | Dr Ir Trikoesoemaningtyas, MSc. |
| 68 | WBS | Dr. Willy Bayuardi Suwarno, SP MSi. |
| 69 | WDW | Ir. Winarso D. Widodo, MS.PhD. |
| 70 | YWE | Dr. Ir. Yudiwanti Wahyu E.K., MS |
| 71 | OSI | Okti Syah Isyani, SP MSi. |
| 72 | EPR | Erin Puspita Rini, SP MSi. |

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BIO100 Biology

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|---|---|
| Module Name | Biology |
| Module level | General Course |
| Code | BIO100 |
| Subtitle | - |
| Courses | BIO100 Biology |
| Semester(s) in which the module is taught | 1 st Semester |
| Person responsible for the module | |
| Lecturer | Team Teaching from Biology Departement |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester |
| Workload | Class: 2 hours x 14 weeks = 28 hours Practical Class : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 74 hours |
| Credit points | 3 (2-3) sch = 2.5 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | 1. Explaining the scope of biology, observe and explain the structure and metabolism of cells. 2. Observing and explaining the basic cellular reproduction and patterns of inheritance. 3. Observing and explaining the structure and expression of genes, and biotechnology. 4. Observing and explaining the diversity, structure and biological functions of organisms: monera, protists, fungi, plantae, animalia. 5. Observing and explaining the ecology: population, community, ecosystem and bioconservation. |
| Content | This course explains the theories and basic principles of biology that form the basis for further courses in the major / department. The lecture begins by explaining the scope of biology and the origins of life, then proceeding to the Midterm Examination, lectures explaining the structure and function of biology at the cellular level, genetics and its application in biotechnology. In the next section until the Final Examination, the lecture explains about biodiversity and biological functions at the level of organisms (monera, protists, fungi, plantae, and animalia), population, community, ecosystem, and conservation biology. Examples and the application of each topic are given to help students understand basic principles |

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| | and theories. This course is equipped with practicum as a support of theoretical knowledge provided in lectures. This course is offered in 1st semester (odd) and 2nd semester (even), as well as short semesters (over the year) specifically for repeaters. |
| Study and examination requirement and forms of examination | <p>Cognitive: Midterm exam, Final exam, Quizzes, Assignments</p> <p>Psychomotor: Practice</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.</p> |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <p>1. Jane B. Reece, Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Robert B. Jackson. 2014. Campbell Biology.10th. Pearson Education, Inc.</p> <p>2. Neil A. Campbell, Jane B. Reece. 2008. Biology 8th. Pearson Benjamin Cummings: San Francisco.</p> |

IPB100, IPB101, IPB102, IPB103, IPB104, IPB110

Religion Education

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|--|--|
| Module Name | Religion Education |
| Module level | General Course |
| Code | IPB100, IPB101, IPB102, IPB103, IPB103, IPB104, IPB110 |
| Subtitle | - |
| Courses | Religion Education (Islam, Protestantism, Catholicism, Hindu, Buddhism, Confucianism) |
| Semester(s) in which the module is taught | 1 st Semester |
| Person responsible for the module | Drs. Hamzah, M.Ag |
| Lecturer | Team Teaching |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester Student centered learning : 2 hours x 14 weeks per semester |
| Workload | Class: 2 hours x 14 weeks = 28 hours Class Discussion : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 60 hours |
| Credit points | 3 (2-2) sch = 2 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | Able to understand human concepts and human relations with religion Able to accustom noble behavior (morals) in the community environment. |
| Content | Religion Education course is taught in order to equip students with insight in Islamic knowledge comprehensively (broadly and deeply), encourage students to study, study and live the verses of Allah SWT (Qauliyah and Kauniyah) and not to be dichotomous and to give an understanding of human nature who need a guide to life (al Islam), both individually and socially in order to achieve happiness in this world and the afterlife. |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Problem solving practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |

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| Reading list | Varies depending on religion |
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IPB106 Bahasa Indonesia (Indonesian Language)

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| Module Name | Bahasa Indonesia |
| Module level | General Course |
| Code | IPB106 |
| Subtitle | - |
| Courses | IPB106 Bahasa Indonesia |
| Semester(s) in which the module is taught | 1 st Semester |
| Person responsible for the module | |
| Lecturer | Team Teaching from Language Institut |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 50 minutes x 14 weeks per Semester Student centered learning 2 hours x 14 weeks per semester |
| Workload | Class: 1 hours x 14 weeks = 14 hours Class Discussion : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 46 hours |
| Credit points | 2 (1-2) sch = 1.5 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | Student is able to understand and choose the right Indonesian vocabulary; skilled at writing papers according to their competencies; communicate verbally well; proud to speak Bahasa Indonesia as the basis for applying the field of science according to its competence. |
| Content | Indonesian Language course includes in general subjects. This course is expected to shape the personality of students who are ethical, cultured in Indonesia, and proud of Indonesian language. The material provided in this course is history, position and function of Indonesian language, spelling (letter and punctuation), terminology, effective sentences: diction and reasoning, paragraphs, type of writing (description, narration, exposition, argumentation, and persuasion), reproduction: summary, abstract, or synthesis, quotation, reference system, and bibliography, writing scientific papers, and oral presentation techniques. |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Problem solving practices Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |

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| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

IPB107 Introduction to Agricultural Science

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|--|---|
| Module Name | Introduction to Agricultural Science |
| Module level | General Course |
| Code | IPB107 |
| Subtitle | - |
| Courses | IPB107 Introduction to Agricultural Science |
| Semester(s) in which the module is taught | 1 st Semester |
| Person responsible for the module | Prof. Dr. Ir. Hadi Susilo Arifin, M.S. |
| Lecturer | Prof. Dr. Ir. Hadi Susilo Arifin, M.S. (Koordinatoor) Prof. Dr. Ir. Kukuh Murtalaksono, M.S. Prof. Dr. Ir. Ahmad Sulaeman, M.S. Dr. Ir. Budi Setiawan, M.S. Prof. Dr. Ir. I. Komang Gede Wiryawan Prof. Dr. Ir. Didi Sopandie, M.Agr. Dr. Ir. Sugeng Santoso, M.Agr" Dr. drh. Ligaya ITA Tumbelaka, SpMP., M.Sc Dr. Ir. Tania June, M.Sc Dr. drh. Koekoeh Santoso |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester |
| Workload | Class: 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 32 hours |
| Credit points | 2 (2-0) sch = 1.1 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After taking this course, students is able to explain agriculture in a broad sense and the supporting sciences. |
| Content | The course is designed and structured to take IPB students into the world of agriculture in the broadest sense by making various topics related to agricultural sciences beginning with the understanding of scientists and knowledge, agricultural and environmental sciences, agricultural and agricultural business history, weather and climate, energy and photosynthesis, food and nutrition, life cycle, postharvest technology, non-food agriculture, agribusiness and agro-industry, biotechnology and hydroponics, 21st century agricultural vision |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, |

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| | active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | AHN: Buku PIP Author AHN (Book 1-Soft File) KM: Buku Kumpulan Makalah (Book 2-Soft File) TGM: Buku Tantangan Generasi Muda (Hard File) |

MAT101 Fundamentals of Mathematics

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|--|--|
| Module Name | Fundamentals of Mathematics |
| Module level | General Course |
| Code | MAT101 |
| Subtitle | - |
| Courses | MAT101 Fundamental of Mathematics |
| Semester(s) in which the module is taught | 1 st Semester |
| Person responsible for the module | Windiani Erliana |
| Lecturer | Team Teaching from Mathematics Departement |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester |
| Workload | Class: 2 hours x 14 weeks = 28 hours Practical Class : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 60 hours |
| Credit points | 3 (2-2) sch = 2 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | 1. Student is able to explain basic mathematical concepts (interval, inequality and absolute value; function; limit and continuous function; derivative; integral; matrix; and system of linear equations). 2. Able to use basic mathematical techniques to solve simple mathematical problems. 3. Able to apply basic mathematical concepts and techniques to solve applied problems. |
| Content | This course discusses the basic concepts of mathematics which include concepts of inequality and absolute value, function and model, limit and continuous function, derivative, integral, matrix and system of linear equations with more emphasis on aspects of calculation |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Problem solving practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | 1. Tim Penulis. Diktat Kuliah Landasan Matematika. Departemen Matematika FMIPA IPB, Bogor, 2017. |

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| | <p>2. Varberg D, Purcell EJ, Rigdon SE. 2011. Kalkulus. Ed ke-9. Jilid 1. Susila IN, penerjemah. Jakarta (ID): Penerbit Erlangga. Terjemahan dari: Calculus. 9th Ed.</p> <p>3. Stewart J. 2002. Kalkulus. Ed ke-4. Jilid 1. Susila IN, Gunawan H, penerjemah. Jakarta (ID): Penerbit Erlangga. Terjemahan dari: Calculus. 4th Ed.</p> |
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KPM130 General Sociology

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| Module Name | General Sociology |
| Module level | General Course |
| Code | KPM130 |
| Subtitle | - |
| Courses | KPM130 General Sociology |
| Semester(s) in which the module is taught | 1 st Semester |
| Person responsible for the module | Dr Ivanovich Agusta, SP, MSi |
| Lecturer | Team Teaching from Communication Science and Human Development Departement |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester |
| Workload | Class: 2 hours x 14 weeks = 28 hours Class discussion : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 60 hours |
| Credit points | 3 (2-2) sch = 2 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After attending this course student is able to understand the concepts, analyze situations and social changes in society, and identify social realities and problems at the level of groups, organizations, institutions, communities, and global by considering power and authority, ecology and gender. In addition, student is able to conduct sociological studies, communicate the results of studies for decision making based on qualitative and quantitative approaches that can be accounted for. |
| Content | This course explains the history and development of Sociology; Sociology as an Perspective; Social Interaction and Structure; Society and Culture; Social Institutions; Group; Organization and Bureaucracy; Social Stratification; Power and Authority; Communication Patterns, Forms of Society and Patterns of Ecological Adaptation; Gender and Development; and Social Change and Development |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |

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|----------------|--|
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <ol style="list-style-type: none"> 1. Charon, J.M. 1980. <i>The Meaning of Sociology</i>. Alfred Publishing Co. Inc. America. 2. Calhoun, C., et.al. 1994. <i>Sociology</i> (6th edition). McGraw-Hill, Inc. USA. 3. Wibisono, Koento. 1982. Arti Perkembangan Menurut Filsafat Positivisme Auguste Comte. Yogyakarta: Gadjah Mada University Press. 4. Gillin, J.L. & J.P. Gillin, 1954. <i>Cultural Sociology</i> (3rd printing). New York: The Macmillan Co. 5. Maiolo, J., et.al., 1991. <i>Study Guide to Accompany Bassis, Gelles and Levine: Sociology An Introduction</i>. McGraw-Hill, Inc. USA. 6. Soekanto, S., 1990. Sosiologi Suatu Pengantar. Jakarta: Rajawali Press. 7. Geertz, C. 1976. <i>Agricultural Involution: process of ecological change in Indonesia</i>. Berkeley: University of California Press. 8. Herskovits, M.J. 1955. <i>Cultural Anthropology</i>. New York: Alfred A. Knopf. 9. Koentjaraningrat (Ed.). 1979. Manusia dan Kebudayaan di Indonesia. Jakarta: Penerbit Djambatan. 10. Kluckhohn, F.R. 1961. "Dominant and variant value-orientation" in: FR Cluchohn & HA Murray (Eds.), <i>Personality in Nature, Society and Culture</i>. New York: Alfred A Knopf. 11. Redfield, R. 1956. <i>Peasant society and culture</i>. Chicago: University of Chicago Press. 12. Tan, M.G. 1973. "Masalah perencanaan penelitian" dalam Koentjaraningrat (Ed.), <i>Metode-metode Penelitian Masyarakat</i>. Jakarta: LIPI. 13. Dorn, J.A.A. van & C.J. Lammers. 1959. <i>Modern Sosiologie een systematische inleiding</i>. Utrecht Antwerpen: Het Spectrum. 14. Koentjaraningrat. 1964. Pengantar Antropologi, Jakarta: Penerbit Universitas. 15. _____. 1979. Kebudayaan, Mentalitas dan Pembangunan. Jakarta: Gramedia. 16. MacIver, R.M. & C.H. Page. 1957. <i>Society and Introductory Analysis</i>. New York: Rinehart and Company, Inc. 17. Merton, R.K. 1967. <i>Social Theory and Social Structure</i>. New York: The Free Press. Polak, 18. J.B.A.F.M. 1966. Sosiologi: Suatu Buku |

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| | <p>Pengantar Ringkas. Jakarta: Penerbit dan Balai Buku “Ichtiar”.</p> <p>19. Soemardjan, S. & S. Soemardi (Eds.). 1974. Setangkai Bunga Sosiologi. Jakarta: Yayasan Badan Penerbit Fakultas Ekonomi Universitas Indonesia.</p> <p>20. Uphoff, N. 1993. “Grassroots Organizations and NGOs in Rural Development: Opportunities with Diminishing States and Expanding Markets.” <i>World Development</i>, Vol 21(4): pp607-622.</p> <p>21. _____. 1986. Local Institutional Development: An Analytical Sourcebook with Cases. New York: Kumarian Press.</p> <p>22. Bierstedt, R. 1982. The Social Order. Bombay: Tata McGraw Hill Publishing.</p> <p>23. Koentjaraningrat, 1979, “Isi konsep desa di Indonesia” dalam Koentjaraningrat (Ed.), Masyarakat Desa di Indonesia Masa Ini. Jakarta: Yayasan Penerbit Fakultas Ekonomi Universitas Indonesia.</p> <p>24. Merton, R.K. 1967. Social Theory and Social Structure. New York: The Free Press.</p> <p>25. Bassis, M.S., R.G. Jelles, and A. Levine, 1991, Sociology An Introduction, New York: Mc Graw Hill.</p> <p>26. Berelson, B. & G.A. Steiner. 1964. Human Behaviour. Harcourt: Brase & World.</p> <p>27. Etzioni, A.1982. Organisasi-organisasi Modern. Jakarta: UI Press.</p> <p>26</p> <p>28. Himes (1976). The Study of Sociology An Introduction. Illinois: Scott, Foresman and Co.</p> <p>29. Schoorl, J.W., 1982. Modernisasi. Jakarta: Gramedia.</p> <p>30. Soekanto, S. 1983. Struktur Sosial Masyarakat. Jakarta: Gramedia.</p> <p>31. Weber, Max . 1974. The Theory of Social and Economic Organization. New York: The Free Press.</p> <p>32. Bierstedt, R. 1970. The Social Order An Introduction to Sociology. New York: McGraw Hill Book Co.</p> <p>33. Calhoun, C. et al. 1994. Sociology An Introduction. McGraw Hill, Inc.</p> <p>34. Sorokin, P.A. 1959. Social and Cultural Mobility. London: Collier-Macmillan Ltd.</p> <p>35. Wertheim, W.F. 1959. Indonesian Society in Transition A Study of Social Change. S’Gravenhage: W van Hoeve.</p> |
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| | <p>36. Nisbet, R.A. 1993. <i>The Sociological Tradition</i>. London: Transaction Publishers.</p> <p>37. Mulyana, D. 2001. Ilmu Komunikasi: Suatu Pengantar. Bandung: Remaja Rosdakarya.</p> <p>38. Lerner, D. 1978. Memudarnya Masyarakat Tradisional. Yogyakarta: Penerbit Universitas Gadjah Mada.</p> <p>39. Wright, H. N. 1997. Komunikasi: Kunci Perkawinan Bahagia. Yogyakarta: Penerbit Gloria.</p> <p>40. Odum E.P., 1971</p> <p>41. Ellen C. Semple (1911),</p> <p>42. Carl Ritter dan Ellsworth Huntington. Alfred L. Kroeber. 1939</p> <p>43. Arnold Toynbee (1947),</p> <p>44. Harold & Margaret Sprout (1965) Moris Treilich (1967).</p> <p>45. Julian H. Steward (1955).</p> <p>46. Geertz (1963)</p> <p>47. Ada Konflik Mangrove (Kompas, Senin 9 Juni 2013)</p> <p>48. Proyek Kanal Banjir Bebaskan Jakarta dari Banjir ? (M Clara Wresti dan Iwan Santosa 25</p> <p>49. Petani Berhadapan dengan Kekuasaan (Sri Hartati Samhadi, Ahmad Arif, Maria Hartiningsih, Kompas, 11 April 2008)</p> <p>Bappenas 2004 Konferensi Lingkungan hidup stockholm, swedia, 1972</p> <p>50. Fakih. 1999.</p> <p>51. ILO Indonesia. 1997.</p> <p>52. KPP-PA. 2010.</p> <p>53. Yulfitra Raharjo. 2012. Sosialisasi PMK No. 93/PMK.02/2011 Bagi Eselon 1 dan II Bappenas. Jakarta: Bappenas</p> <p>54. Simatauw et all. 2001.</p> <p>55. Harper, C.L . 1989. <i>Exploring Social Change</i>. New Jersey: Prentice-Hall.</p> <p>56. Sztompka, P. 1993. <i>The Sociology of Social Change</i>. Oxford, Cambridge: Blackwell.</p> <p>57. Suwarsono & A.Y. So. 1991. Perubahan Sosial dan Pembangunan di Indonesia: Teori-teori Modernisasi, Dependensi dan Sistem Dunia. Jakarta: LP3ES.</p> |
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AGB100 Introduction to Entrepreneurships

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| Module Name | Introduction to Entrepreneurships |
| Module level | General Course |
| Code | AGB100 |
| Subtitle | - |
| Courses | AGH250 Introduction to Seed Science and Technology |
| Semester(s) in which the module is taught | 2 nd Semester |
| Person responsible for the module | |
| Lecturer | Team Teaching from Agribussines Departement |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 2 hours x 7 weeks |
| Workload | Class: 2 hours x 7 weeks Total: 14 hours |
| Credit points | 1 (1-0) sch = 0.5 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After taking this course, students will have new insights about the entrepreneurial potential and be motivated to develop themselves and be able to change the way of thinking in developing the entrepreneurial spirit. |
| Content | This course discusses the understanding and principle of entrepreneururships the nature and characteristics of entrepreneurs, the introduction and development of entrepreneurial personality, motivation and opportunities for entrepreneurships, entrepreneurial characters, entrepreneurial ideas,and basic business planning |
| Study and examination requirement and forms of examination | Cognitive: Assignment Psychomotor: - Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | 1. Ciputra. 2009. Ciputra Quantum Leap Entrepreneurship Mengubah Masa Depan Bangsa dan Masa Depan Anda. PT Elex Mediacomputindo,Jakarta. 2. Drucker, Peter, F. 1991. Inovasi dan Kewiraswastaan, Praktik dan Dasar-dasar. Alih Bahasa oleh Rusjdi Naib. Penerbit Erlangga. 3. Longenecker, Justin G. Carlos W. Moore, J. William Petty. 2000. Kewirausahaan, Manajemen Usaha Kecil. Penerbit Salemba Empat. |

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| | 4. Wijayanto, Dian dan Sofuan Salim. 2007. The Secret Behind Your Dream : Dahsyatnya Kekuatan Impian yang Mempengaruhi Kesuksesan Anda. Sketsa Inti Media. Jakarta. |
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EKO100 General Economics

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| Module Name | General Economics |
| Module level | General Course |
| Code | EKO100 |
| Subtitle | |
| Courses | EKO100 General Economics |
| Semester(s) in which the module is taught | 2 nd Semester |
| Person responsible for the module | |
| Lecturer | Team Teaching from Economics Science Departement |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester |
| Workload | Class: 2 hours x 14 weeks = 28 hours Class discussion : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 60 hours |
| Credit points | 3 (2-2) sch = 2 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After attending this course, student is able to understand of economics as a branch of science, understand the behavior of households, companies and markets in economic decision making, understand macroeconomics, problems and the actual conditions of Indonesian macroeconomics. |
| Content | This course provides a general overview of economics, economic agents, demand, supply, budget lines and indifference curves, production and costs, market structure, key macroeconomic variables, national income, changes in national income, fiscal policy and monetary policy |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | Books for lecture class: Lipsey. R. G., P. O Steiner, and D. D. Purpis. 1987. Economics. Harper International Edition. Books for practical class: 1. Penuntun Responsi Ekonomi Umum. 2013. Departemen Ilmu Ekonomi (IE), Fakultas |

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| | <p>Ekonomi dan Manajemen (FEM). IPB.</p> <p>2. Lipsey. R. G., P. O Steiner, and D. D. Purpis. 1987. Economics. Harper International Edition. 3</p> <p>3. Gregory, M. 2006. Principles of Economics (Pengantar Ekonomi Mikro) Edisi 3. Salemba Empat.</p> |
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FIS100 Physics

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| Module Name | Physics |
| Module level | General Course |
| Code | FIS100 |
| Subtitle | - |
| Courses | FIS100 Physics |
| Semester(s) in which the module is taught | 2 nd Semester |
| Person responsible for the module | 1. Mersi Kurniati (Course Coordinator) 2. Sidikrubadi Pramudito (Practical Class Coordinator) |
| Lecturer | Team Teaching from Physics Departement |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester |
| Workload | Class: 2 hours x 14 weeks = 28 hours Practical Class : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 74 hours |
| Credit points | 3 (2-3) sch = 2.5 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | Student is able to use various physical formulations in the scope of solving simple physics problems and applying them to other fields |
| Content | This course is taught to provide students with insight into the scope of mechanics, vibration waves, dynamics, electricity, electromagnetism and modern physics as well as providing a basis that is suitable for students who need basic physics |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

KIM101 Chemistry

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| Module Name | Chemistry |
| Module level | General Course |
| Code | KIM101 |
| Subtitle | - |
| Courses | KIM101 Chemistry |
| Semester(s) in which the module is taught | 2 nd Semester |
| Person responsible for the module | |
| Lecturer | Team Teaching from Chemistry Departement |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester |
| Workload | Class: 2 hours x 14 weeks = 28 hours Practical Class : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 74 hours |
| Credit points | 3 (2-3) sch = 2.5 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After taking this course, students will be able to explain the chemical linkages in life processes related to aspects of daily life. |
| Content | This course is given to equip students about the basic concepts of chemistry that are conveyed simply and popularly, including the understanding and importance of chemistry, understanding of atoms and atomic structure, core chemistry, chemical bonds, names, formulas, and chemical equations, acids / bases, oxidation and reduction, organic chemistry and polymers, energy, chemical chemistry, food chemistry, chemotherapy and toxicology |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

IPB108 English

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| Module Name | English |
| Module level | General Course |
| Code | IPB108 |
| Subtitle | - |
| Courses | IPB108 English |
| Semester(s) in which the module is taught | 2 nd Semester |
| Person responsible for the module | Muhammad Thonthowi Djauhari |
| Lecturer | Team Teaching from Language Institute |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester |
| Workload | Class: 2 hours x 14 weeks = 28 hours Class Discussion : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 60 hours |
| Credit points | 3 (2-2) sch = 2 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | Students are able to applying "reading skills" in understanding texts in English, know the structure of language to support understanding of texts in English; |
| Content | This course describes the techniques and strategies for understanding an English reading text and sentence structure related to reading / discourse in English |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | 1. Abdulaziz, Helen Taylor, & Alfred D. Stover. 1980. Academic Challenges in Reading. Prentice-Hall, Inc. Englewood Cliffs, N.J. 2. Anson M. Chris, Schwegler A. Robert. 2001. The Longman Handbook for Writers and Readers, An Imprint of Addison Wesley Longman, Inc. 3. Dobbs, Carrie. 1989. Reading for a Reason. Prentice Hall Regents Englewood Cliffs, N.J. |

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| | <p>4. Feverstein, Tamar and Miriam S. 1995. Enhancing Reading Comprehension in the Language Learning Classroom. Alta Book Center Pub. San Fransisco, California.</p> <p>5. Grellet, Francois. 1981. A Practical Guide to Reading Comprehension Exercises. Cambridge University Press.</p> <p>6. Hornby, A.S. 1991. Oxford Advanced Learner's Dictionary. Oxford UP.</p> <p>7. Karen Blanchard et.al. 1997. For Your Information 3. Longman.</p> <p>8. Kranhlee, Karl. 1976. Reading Together: A Reading Activities Text. St. Martin Press.</p> <p>9. Labarca. Angela and James M. Hendrickson. 1984. Our Global Village. Harcourt Brace Jovanovichy, Inc.</p> <p>10. Latulippe, L.D. 1987. Developing Academic Reading Skills. Prentice Hall Regents, Englewood Cliffs, N.J.</p> <p>11. Maingay, S. 1983. Making Sense of Reading: an Introduction to Reading Skills in English. Australia Nelson.</p> <p>12. Marcelino, M. 1999. Materials for Foundations of Academic Writing Course. AMINEF, Jakarta.</p> <p>13. Mickulecky, Beatrice S. 2004. More Reading Power, Reading for Pleasure, Comprehension Skills, Thinking Skills, Reading Faster. Pearson Education, Inc.</p> <p>14. Oshima, Alice, and Ann Hogue. 1999. Writing Academic English. Longman.</p> <p>15. Praninkas, Jean. 1975. Rapid Review of English Grammar. Prentice Hall.</p> <p>16. Rowland, Black S. and Lisa Rosenthal. 1986. Academic English and Study Skills for International Students. Prentice Hall. N.J.</p> <p>17. Skykes, J.B. 1989. The Concise Oxford Dictionary. Oxford UP.</p> <p>18. The British Council. 1979. Reading and Thinking: Exploring Functions. Oxford UP.</p> <p>19. Torres G, Eunice. Smith L. Michael. English for Fisheries Technology. National Bookstore, Inc.</p> <p>20. Valerie Kay. 1985. Biological Sciences "Developing Reading Skill in English". Pergamon Press.</p> |
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| | <p>21. Woods, Enid Nolan and David Foll. 1986. Penguin Advanced Reading Skills. Penguin Book Ltd. England.</p> <p>22. https://en.wikipedia.org/wiki/Chart</p> <p>23. https://en.wikipedia.org/wiki/Graph</p> <p>24. https://www.ncsu.edu/labwrite/res/tablevsgraph/restablevsgraph.html</p> <p>25. http://www.diffen.com/difference/Communism_vs_Fascism</p> <p>26. http://www.diffen.com/difference/DNA_vs_RNA</p> |
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IPB111 Pendidikan Pancasila (Civics Education)

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| Module Name | Pendidikan Pancasila |
| Module level | General Course |
| Code | IPB111 |
| Subtitle | - |
| Courses | IPB111 Pancasila |
| Semester(s) in which the module is taught | 2 nd Semester |
| Person responsible for the module | Mukhlis Ansori |
| Lecturer | Mukhlis Ansori Didid Diapari |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in IPB University |
| Type of teaching, contact hours | Lecture (Face to face lecture): 50 minutes x 14 weeks per Semester Discussion : 2 hours x 14 weeks per semester |
| Workload | Class: 1 hours x 14 weeks = 14 hours Class discussion : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 46 hours |
| Credit points | 2 (1-2) sch = 1.5 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | <ol style="list-style-type: none"> 1. Students understand the vision, mission and goals of Civics Education. 2. Students identify disturbances and threats to the nation and the Republic of Indonesia and state defense efforts adapted to global challenges. 3. Students is able to analyze the formation of the Republic of Indonesia based on history and elements of the the state formation, analyze the concept of national integration. 4. Student is able to explain the meaning of nationalism. 5. Student is able to analyze the importance of the state constitution. 6. Student is able to describe the atmosphere when making the 1945 Constitution. 7. Student is able to explain the meaning of the Preamble of the 1945 Constitution and its relationship with the Proclamation of Independence and the Body 8. Student is able to compare the implementation of the 1945 Constitution from time to time 9. Student is able to analyze and show changes in amendments to the 1945 Constitution, especially in state institutions as executors of people's sovereignty |

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| | <p>10. Student is able to explain Pancasila as a system of philosophy and unity of precepts in Pancasila.</p> <p>11. Student is able to analyze Pancasila as a source of values.</p> <p>12. Describe the meaning of Pancasila as the basis of the state, comparing Pancasila as an open ideology with other ideologies, and its function as well as a national development paradigm.</p> <p>13. Student is able to explain the problem of Indonesian citizenship.</p> <p>14. Student is able to categorize the rights and obligations of Indonesian citizens.</p> <p>15. Student is able to link the implementation of democracy with the enforcement of human rights.</p> <p>16. Analyzing the implementation of democracy in Indonesia since the old order, new order and reform</p> <p>17. Analyzing the efforts to promote, respect and uphold human rights in Indonesia and the world.</p> <p>18. Student is able to relate the concept of geopolitics and archipelago insight.</p> <p>19. Student is able to explain the concept of Indonesian territory.</p> <p>20. Student is able to describe the implementation of national insights in national development.</p> <p>21. Student is able to explain Indonesia's national resilience and implementation</p> <p>22. Student is able to explain analyzing problems and formulating politics and national strategies.</p> <p>23. Student is able to explain the principles of good governance in public organizations and state administration.</p> <p>24. Student is able to explain the implementation of regional autonomy.</p> <p>25. Student is able to categorize corrupt acts and the importance of efforts to prevent corruption.</p> |
| Content | <p>Civics education gives understanding to students as the next generation to apply the fundamental values of the nation and state of Indonesia in effort to strengthen awareness of national defense, strengthen attitudes and behaviors of citizens, master in knowledge of the basic problems of national and state life, and to be pro-active towards change. That occurs in order to realize the integration of science and technology and development.</p> |
| Study and examination requirement and forms of examination | <p>Cognitive: Midterm exam, Final exam, Quizzes, Assignments</p> <p>Psychomotor: Case study discussion</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.</p> |
| Media employed | <p>Classical teaching tools with white board and power point presentation</p> |

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| Reading list | <ol style="list-style-type: none"> 1. Membangun Kesadaran Bela Negara Dr. Ir. Parlaungan Adil Rangkuti,M.Si. IPB Press 2. Paradigma Baru Pendidikan Kewarganegaraan. Winarno,S.Pd, M.Si. PT.Bumi Aksara: 2008 3. Cerdas Kritis dan Aktif Berwarganegara, Pendidikan Kewarganegaraan Untuk Perguruan Tinggi. Heru Herdiawanto,M.Si dan Jumanta Hamdayama,M.Si, Erlangga: 2010 4. Panduan Kuliah Pendidikan Pancasila untuk Perguruan Tinggi. Elly M.Setiadi.M.Si. Gramedia: 2007 5. Pendidikan Kewarganegaraan: Demokrasi, Hak Asasi Manusia, Masyarakat Madani. ICCE UIN dan Prenada Media: 2003 |
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KPM 110 Basics of Communication

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| Module Name | Basics of Communication |
| Module level | Beginner (Foundational Courses) |
| Code | KPM 110 |
| Subtitle | - |
| Courses | KPM 1110 Basics of Communication |
| Semester(s) in which the module is taught | 4 th Semester |
| Person responsible for the module | Dr Ir Ninuk Purnaningsih MSi |
| Lecturer | Team Teaching from Communication and Community Department |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Class discussion : 2 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent learning) : 5.3 hours x 14 week per semester = 74.2 hours Class discussion : 2 hours x 14 weeks per semester = 28 hours Exam : 2 hours x 2 time = 4 hours Total : 106.2 hours/semester |
| Credit points | 3 (2-2) sch = 3.5 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | None |
| Module objectives/intended learning outcome | After completing this course student will be able to explain the role of information, communication and media in development and social change |
| Content | This course discusses the importance of communication in development and social change, issues in development, definition of communication in development, the role and competence of development communicators, context in communication in development. |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Case study discussion Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching , discussion , role playing and games |
| Reading list | |

TSL202 Introduction to Soil Science

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| Module Name | Introduction to Soil Science |
| Module level | Beginner (Foundational Courses) |
| Code | TSL202 |
| Subtitle | - |
| Courses | TSL 202 Introduction to Soil Science |
| Semester(s) in which the module is taught | 3 rd Semester |
| Person responsible for the module | Dr Ir Basuki Sumawinata, MAgr |
| Lecturer | Team Teaching from Land Resources Management Department |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 2.5 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent learning) : 8 hours x 14 week per semester = 112 hours Mid Exam : 2 hours Final exam : 2 hours Total : 116 hours/semester |
| Credit points | 3 (3-0) SCH = 3.9 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | None |
| Module objectives/intended learning outcome | After completing this course students will be able to <ol style="list-style-type: none"> 1. Explain the soil materials and the process of soil formation 2. Describe soil characteristics, soil classification, to maintain soil function 3. Master soil morphology, soil classification, organic matters and soil microorganism and soil fertility 4. Able to apply soil survey and mapping, soil use planning, type and doses of fertilizers, soil and water conservation to improve soil quality. |
| Content | This course is designed to introduce students to soil science and the role of soil in agriculture, discusses various topics in soil science to include soil materials, soil formation, soil morphology, soil chemistry, organic materials, soil microorganisms, soil fertility, fertilizers and applications, soil classification, land survey and evaluation, land use planning, and conservation. |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |

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| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

ESL211 AGRICULTURE ECONOMIC

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| Module Name | Agriculture Economic |
| Module level | Beginner (Foundational Courses) |
| Code | ESL211 |
| Subtitle | - |
| Courses | ESL211 Agriculture Economic |
| Semester(s) in which the module is taught | 3 rd Semester |
| Person responsible for the module | Prof. Bonar M. Sinaga |
| Lecturer | Dr Yusman Syaikat Ujang Sehabudin, MSi A. Faroby Falatehan, ME Adi Hadiano, MSi Novindra, MSi Hastuti, MP, MSi Nia Kurniawati H., MSi Arini hArdjanto, MSi Fitria Dewi R., Msi |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 150 minutes x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent learning) : 8 hours x 14 week per semester = 112 hours Mid Exam : 2 hours Final exam : 2 hours Total : 116 hours/semester |
| Credit points | 3 (3-0) SCH = 3.9 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | EKO100 General Economics |
| Module objectives/intended learning outcome | After completing this course, students will be able : 1. to explain the meaning and scope of agriculture economic 2. Mampu mengaplikasikan keahlian di bidang ekonomi pertanian dalam menyelesaikan permasalahan pengelolaan sumberdaya dan lingkungan 3. Mampu beradaptasi terhadap situasi yang dihadapi dalam menyelesaikan permasalahan sumberdaya dan lingkungan yang dinamis |
| Content | The topics include the link between economics and agriculture economy, agriculture resources, agriculture institutions, agriculture commodity supply and demands, production and costs, income, marketing and trading of agriculture commodity, regulations and agriculture development. |

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| Study and examination requirement and forms of examination | <p>Cognitive: Midterm exam, Final exam, Assignments</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.</p> |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading List | <ol style="list-style-type: none"> 1. Halcrow, H. 1981. Economic of Agriculture 2. Hanafie, R. 2010. Pengantar Ekonomi Pertanian. Andi Offset, Yogyakarta 3. Mubyarto. Pengantar Ekonomi Pertanian 4. Cramer, G.I. and Clarence W. Jansen. 1994. Agricultural Economics and Agribusiness. John Willey & Sons, Inc, New York 5. Doll 6. Hess 7. Nasution 8. Seitz 9. Arifin 10. Saragih |

GFM221 CLIMATOLOGY

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| Module Name | Climatology |
| Module level | Beginner (Foundational Courses) |
| Code | GFM221 |
| Subtitle | - |
| Courses | GFM221 Climatology |
| Semester(s) in which the module is taught | 3 rd Semester |
| Person responsible for the module | Dr Ir Rini Hidayati, MS |
| Lecturer | Team Teaching from Geometeorology Department |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent learning) : 5.3 hours x 14 week per semester = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Mid Exam : 2 hours Final exam : 2 hours Total : 120.7 hours/semester |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | None |
| Module objectives/intended learning outcome | After completing this course, students will have a good understanding on climate components, factors controlling climate, process of climate formation, climate variations and its applications |
| Content | This course provides understanding of climate components, factors controlling climate, process of climate formation, climate variations in the world and its application. |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <ol style="list-style-type: none"> 1. Trewartha, G.T. and Lyle, H.H. 1980. An Introduction to Climate, Mc Graw-Hill 2. Handoko(ed.) 1993. Klimatologi Dasar, Landasan pemahaman Fisika Atmosfer dan Unsur-unsur iklim 3. L. Hardy, P. Wright, J. Gribbin and J. Kington, 1982, The Weather Book, Michael Joseph Ltd. London |

BIO234 GENERAL BOTANY

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| Module Name | General Botany |
| Module level | Beginner (Foundational Courses) |
| Code | BIO234 |
| Subtitle | - |
| Courses | BIO 234 General Botany |
| Semester(s) in which the module is taught | 3 rd Semester |
| Person responsible for the module | Prof Dr Ir Tatik Chikmawati, MSi |
| Lecturer | Team Teaching from Biology Department |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (laboratory practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent learning) : 5.3 hours x 14 week per semester = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Mid Exam : 2 hours Final exam : 2 hours Total : 120.7 hours/semester |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | None |
| Module objectives/intended learning outcome | After completing this course, students will be able to explain the principles of plant biology, plant evolution and community, plant systematics, plant biodiversity, plant like organisms (Algae), plant organ and organizations from cells to organs, function and structure of plant roots, stem, leaves, flower and fruits. |
| Content | This Course discusses principles of plant biology, plant evolution and community, plant systematics, plant biodiversity, plant like organisms (Algae), plant organ and organizations from cells to organs, function and structure of plant roots, stem, leaves, flower and fruits. |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

BIO242 PLANT PHYSIOLOGY

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| Module Name | Plant Physiology |
| Module level | Beginner (Foundational Courses) |
| Code | BIO242 |
| Subtitle | |
| Courses | BIO242 Plant Physiology |
| Semester(s) in which the module is taught | 4 th Semester |
| Person responsible for the module | Dr Ir Mifthahudin, MSi |
| Lecturer | Team Teaching from Biology Department |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (Laboratory practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent learning) : 5.3 hours x 14 week per semester = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Mid Exam : 2 hours Final exam : 2 hours Total : 120.7 hours/semester |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | None |
| Module objectives/intended learning outcome | After completing this course, students can explain the functions and basic physiological processes in plants such as water transportation, respiration in plants, photosynthesis, essential nutrients, transport and assimilation of mineral nutrients, some fundamental processes of growth and development, photophysiology, basic mechanisms of response plants against environmental stress and the molecular basis of some plant physiology processes. |
| Content | Basic Plant Physiology Course for bachelor degree contains the basic physiology of the processes and functions that take place in higher plants such as transpiration and soil-plant-air relations, respiration, photosynthesis, nutrients and assimilation, hormones in relation to plant growth and development , the mechanism of plant response to environmental stress, and the molecular basis of several cases of physiological processes in plants. |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice Affective: Assessed from the element /variables |

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| | achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

STK211 STATISTICAL METHOD

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| Module Name | Statistical Method |
| Module level | Beginner (Foundational Courses) |
| Code, if applicable | STK211 |
| Subtitle | - |
| Courses | Statistical Method |
| Semester(s) in which the module is taught | 4 th Semester |
| Person responsible for the module | Dra Itasia Dina Sulfianti, MSi dan Dr Ir A. Qadir, MS |
| Lecturer | Team teaching from AGH Department (AQA, YWE, WBS) |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Class discussion : 2 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent learning) : 5.3 hours x 14 week per semester = 74.7 hours Class discussion : 2 hours x 14 weeks per semester = 28 hours Mid Exam : 2 hours Final exam : 2 hours Total : 106.7 hours/semester |
| Credit points | 3 (2-2) SCH = 3.6 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | None |
| Module objectives/intended learning outcome | After completing this course students will be able to explain the basic principles of statistical methods and use simple statistical analysis in agriculture. |
| Content | The topics cover in this courses include descriptive statistics, probability, principles of hypothesis testing, hypothesis testing for proportion, mean, correlation, simple linear regression and contingency table |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: problem example, Case study Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation, Minitab program |
| Reading list | Agresti A, Frankli C, Klingenberg B. 2018. Statistics: The Art and Science of Learning from Data. 4th edition, Edinburg:Pearson Education Limited Koopmans, LH. 1987. Introduction to contemporary Statistical Methods, 2nd ed., Duxbury Press, Boston. |

PTN200 PRINCIPLES OF PLANT PROTECTION

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| Module Name | Principles of Plant Protection |
| Module level | Beginner (Foundational Courses) |
| Code | PTN200 |
| Subtitle | |
| Courses | Principles of Plant Protection |
| Semester(s) in which the module is taught | 3 rd Semester |
| Person responsible for the module | Dr Ir Yayi Munara Kusumah, MSi |
| Lecturer | Team Teaching from Plant Protection Department |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecturer, assignment, independent learning): 5.3 hours x 14 week per semester = 74.7 hours Practical : 3 hours x 14 weeks per semester = 42 hours Mid Exam : 2 hours Final exam : 2 hours Total : 120.7 hours/semester |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | None |
| Module objectives/intended learning outcome | This course topics include principle of plant protection from pest and diseases, bio morphology of pests, pest ecology, concept of plant diseases, classification and symptoms of plant diseases, parasitism, plant defense response to pathogens, environmental factors effecting disease development, epidemy, pest management, disease control and integrated pest management. |
| Content | This course topics include principle of plant protection from pest and diseases, bio morphology of pests, pest ecology, concept of plant diseases, classification and symptoms of plant diseases, parasitism, plant defense response to pathogens, environmental factors effecting disease development, epidemy, pest management, disease control and integrated pest management. |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |

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| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

STK222 EXPERIMENTAL DESIGN

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| Module Name | Experimental Design |
| Module level | Beginner (Foundational Courses) |
| Code | STK 222 |
| Subtitle | |
| Courses | STK 222 Experimental Design |
| Semester(s) in which the module is taught | 5 th Semester |
| Person responsible for the module | Dr Ir Made I Sumertajaya MSi |
| Lecturer | Team Teaching from AGH Department (YWE, PUR, MSY, WBS) |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (in class practice) : 2 hours x 14 weeks per semester |
| Workload | Class : 2 hours x 14 week per semester = 28 hours Practical : 2 hours x 14 weeks per semester = 42 hours Mid Exam : 2 hours Final exam : 2 hours Total : 74 hours/semester |
| Credit points | 3 (2-2) SCH = 3.6 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | STK211 |
| Module objectives/intended learning outcome | After completing this course students will be able to explain the basic principles of experimental design, one and two factor experiments, comparison of treatment values, sampling and analysis of survey data, combined analysis between experiments, as well as covariance analysis and augmented design. Student will also be able to do data analysis according to the design, both manually and using software |
| Content | This courses explain the basic principles Of experimental design, single factor experiment (RCD, Randomized complete block design, latin square), comparison among treatment means (factorial, split plot and split blocks), and comparison of treatment mean value (LSD, HSD, DMRT, t-Dunnet, orthogonal contrast). Also explain topics to meet the needs of achieving the major competencies in AGH, namely sampling and analysis of survey data, combined analysis between experiments, as well as, covariance anaysis and augmented design |
| Study and examination requirement and forms of examination | Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice |

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| | Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <p>Gomez, KA and Gomez, AA. 1983. Statistical Procedures for Agricultural research. 2nd Ed. John Wiley and Sons, New York</p> <p>Steel, RGD, Torrie, JH, Dickey, DA. 1997. Principles and Procedures of Statistics: a biometrical approach. 3rd Ed. McGraw-Hill, Inc Singapore</p> <p>Gasperz, V. 1991. Metode Perancangan Percobaan. Armico. Bandung</p> <p>Mattjik, AA, Sumertajaya, IM. 2002. Perancangan Percobaan dengan aplikasi SAS dan Minitab, Edisi ke 2. IPB Press. Bogor</p> |

ARL200 FUNDAMENTALS OF LANDSCAPE ARCHITECTURE

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| Module Name | Fundamental of landscape Architecture |
| Module level | Beginner (Foundational Courses) |
| Code | ARL200 |
| Subtitle | - |
| Courses | ARL 200 Fundamentals of Landscape Architecture |
| Semester(s) in which the module is taught | 3 rd or 5 th Semester |
| Person responsible for the module | Dr Ir Bambang Sulistyantara, MS |
| Lecturer | Team Teaching from Landscape Architecture Department |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent learning) :5.3 hours x 14 week per semester = 74.7 hours Practical : 3 hours x 14 weeks per semester = 42 hours Mid Exam : 2 hours Final exam : 2 hours Total : 120.7 hours/semester |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | None |
| Module objectives/intended learning outcome | After completing this course, the students is able to describe the landscape as the background and the basis for a wide range of human activities, is able to explain the constraints in planning process, is able to creatively demonstrate the relation of climate to the design, selection and site analysis, and able to synergize aspects of spatial, social and visual which is required in understanding the dynamics of the landscape. |
| Content | This course introduces and explains the scope of landscape architecture and landscape history in Indonesia and the world, explain the process of planning, design and landscape management, review the constraints of planning; introduces the climate and its implications to the design; discusses site selection and analysis; discusses space considerations (exterior space), the organization of site structure, dwelling and human communities from the city scale, region scale up to attain a comfortable life environment |

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| Study and examination requirement and forms of examination | <p>Cognitive: Midterm exam, Final exam, Quizzes, Assignments</p> <p>Psychomotor: Practice</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.</p> |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <ul style="list-style-type: none"> • Simonds JO. 1983. Landscape Architecture: A Manual of Site Planning and Design. McGraw-Hill Book Company: New York. 331 p • Carpenter PL, Walker TD, Lanphear FO. 1975. Plants in the Landscape. W.H. Freeman and Co: San Francisco. 481 p. • Laurie M. 1984. An Introduction to Landscape Architecture. Department of Architecture, University of California: Berkeley. 134 p. • Lyle, JT.1994. Regenerative Design for Sustainable Development. John Wiley and Sons, Inc. New York. 338p. • Parker, J. and P. Bryan. 1989. Landscape Management and Maintenance. Billing and Sons Limited. Worcester. 177p. • Walter, B., L. Arkin, and R. Crenshaw. 1993. Sustainable Cities Concepts and Strategies for Eco-city Development. Eco-home Media. Los Angeles. 354p. • Wekerley, G.R. and C. Whitzman. 1995. Safe Cities: Guidelines for Planning, Design, and Management. Van Nostran Reinhold. New York. 206p. • Hamm J. 1988. Drawing Scenery : Landscape and Seascape. The Berkley Publishing Group. New York. • Wilson, DA., and Wilson TJ. 2003. Planning and Designing Your Home Landscape. Board of Regents of the University of Wisconsin System. Madison. • Dreisetl, H., and D. Grau. 2005. New Waterscapes : Planning, Building, And Designing With Water. Birkhäuser – Publishers for Architecture. Basel · Berlin · Boston. • Jeong, KY. 2006. Landscape Design Park. Archiworld Co. Ltd. Seoul, Korea. |

FPA400 COMMUNITY SERVICE PROJECT

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| Module Name | Community Service Project |
| Module level | Advance (Foundational Courses) |
| Code | FPA400 |
| Subtitle | |
| Courses | FPA 400 Community Service Project |
| Semester(s) in which the module is taught | 6 th Semester |
| Person responsible for the module | Dr Ir Nurhayati , MSi |
| Lecturer | Team Teaching from Faculty of Agriculture |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | 2 months including debriefing and Community service |
| Workload | 60 x 3 hours/day = 180 hours |
| Credit points | 3 SCH = 4 ECTS |
| Requirement according to the examination regulation | <ol style="list-style-type: none"> 1. registered as a student of KKN-P IPB in Dit AP IPB 2. Following lectures and practicing briefing (100%) KKN-P. 3. Take the debriefing exam. 4. Students who lack attendance in attending lectures and briefing practice (item 2), is not allowed to follow debriefing exams, and debriefing courses were given zero marks. 5. Carry out activities in the field / work area. College student required to live on site (mondok) during the KKNP implementation time, including Saturdays and Sundays; 6. Draft KKN-P reports per work area and submit to the IPB KKN-P Implementing Committee at the Faculty two weeks after completion of KKN-P. 7. Take the exam conducted by DPL two weeks after draft report submitted. 8. Submit the final KKN-P report that has been signed by DPL and approved by the Head of LPPM IPB no later than two week after the KKN-P exam to the KKN-P Secretariat at LPPM 1 copy and 1 CD softcopy of the report and to The Secretariat of the Faculty KKN-P Committee is 6 copies. |
| Recommended prerequisites | IPK \geq 2.00 105 SCH |
| Module objectives/intended learning outcome | <ol style="list-style-type: none"> 1. Develop students' knowledge, attitudes, and skills in identifying, planning, implementing and evaluating community empowerment programs in the agriculture field agriculture and in an integrated environment (multi and inter-disciplinary between professions in IPB), 2. Increase awareness and commitment, and prepare |

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| | students to skilled in communicating and collaborating among profession in overcoming problems in society, 3. Preparing students to be able to develop networks cooperation in problem solving efforts to fulfill needs in the dynamics of actual life in society. |
| Content | This course provide learning experience for student to apply their knowledge and skills for community service project |
| Study and examination requirement and forms of examination | 1. Debriefing (attendace, active, effort, exam) 2. Field (supervisors and village head) 3. Reports and Exams 4. Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Students (5-7) from various fields of expertise are placed in one village to implement the KKN-P program in synergy with the development program that is being and will be implemented by the local government. |
| Reading list | IPB University Guide book of Community Service Project |

FPA 401 AGRICULTURE POLITIC

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| Module Name | Agriculture Politic |
| Module level | Advance (Foundational Courses) |
| Code | FPA401 |
| Subtitle | - |
| Courses | FPA 401 Agriculture Politic |
| Semester(s) in which the module is taught | 7 th Semester |
| Person responsible for the module | Dr Ir Ernan Rustiadi, MAgr |
| Lecturer | Team Teaching from Faculty of Agriculture |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture and class discussion: 100 minutes x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent learning) 5.3 x 14 weeks/semester = 74.7 hours Mid Exam : 2 hours Final exam : 2 hours Total : 78.7 hours/semester |
| Credit points | 2 (2-0) SCH = 2.6 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | None |
| Module objectives/intended learning outcome | After completing this courses students will be able to objective of agriculture development, agriculture multi-dimension, rural development, agrarian politics, bioindustry, supply chain of agricultural products, food sufficiency and security, policy on food price, and global agriculture politics |
| Content | This courses discusses the objective of agriculture development, agriculture multi-dimension, rural development, agrarian politics, bioindustry, supply chain of agricultural products, food sufficiency and security, policy on food price, and global agriculture politics |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

AGH200 Fundamentals of Agronomy

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| Module Name | Fundamentals of Agronomy |
| Module level | AGH SP Spesific Course |
| Code | AGH200 |
| Subtitle | - |
| Courses | AGH200 Fundamentals of Agronomy |
| Semester(s) in which the module is taught | 3 rd Semester |
| Person responsible for the module | Dr Ir Ade Wachjar, MS. (AWA) |
| Lecturer | ADS, AJU, AKU, AMA, APL, APU, AQA, ASE, AWA, AWR, AZA, BSP, CBU, DDI, DDM, DEF, DGU, DSU, DWI, DSO, ERP, ESA, ESU, EWI, HAG, HAR, HAS, HPU, ILU, JGK, KRI, KSU, MAC, MGH, MME, MRS, MSR, MSU, MSY, NKH, NMA, PUR, SAA, SAM, SHS, SIA, SIL, SOB, SUP, SSU, SUA, SUD, SUG, SUW, SWA, SYA, SZA, TKS, TKU, WDW, WBS, YWE |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After completing this course, the students are expected to have insights and perspectives in agronomy, and able to explain the basics of agronomy principles to get maximum yield and sustainable production |
| Content | This course discusses the roles of crops in relation to culture, economic development and the supply of food and nutrition for a community or country in order to increase crop production; the concept of energy flow in agriculture and increase the efficiency of energy use for cultivation; the origins of plant classification, function and structure of plant morphology, stages of plant growth in relation to balancing the use and accumulation of carbohydrates; environmental factors that affect plant growth and crop production; plant propagation, plant breeding, breeding methods and seed technology; crop production techniques, the basics of <i>Panca Usaha</i> , and farming system: multiple cropping, wetland rice, dry farming and estate crop production. |

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| Study and examination requirement and forms of examination | <p>Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report</p> <p>Psychomotor: Practice</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.</p> |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <p>Harjadi, S.S. 2019. Pengantar Agronomi. Gramedia. Jakarta</p> <p>UU No 12 tahun 1992 tentang Sistem Budidaya Tanaman</p> |

AGH 210 Genetics for Plant Breeding

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| Module Name | Genetics for Plant Breeding |
| Module level | AGH SP Spesific Course |
| Code | AGH 210 |
| Subtitle | - |
| Courses | AGH 210 Genetics for Plant Breeding |
| Semester(s) in which the module is taught | 3 rd Semester |
| Person responsible for the module | Prof.Dr. M. Syukur, SP. MSi |
| Lecturer | MSY, DWI, SOB, HAS, SHS, AWR, WBS, YWE, SIA, TKO |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | <ol style="list-style-type: none"> 1. Have the understanding and ability to explain the genetic materials, genes and cell division 2. Have the understanding and ability to explain the qualitative inheritance 3. Have the understanding and ability to explain the mutation of genes and chromosomes 4. Have the understanding and ability to explain the mapping and linking of genes 5. Have the understanding and ability to explain the extrachromosomal inheritance 6. Have the understanding and ability to explain the quantitative inheritance |
| Content | This course teaches students to explain the meaning and the scopes of plant genetics, genetic materials, gene expression, mitosis and meiosis, the basis of Mendelian inheritance, gene interactions, genetic linkages and mapping, gene and chromosome mutations as well as quantitative inheritance and extrachromosomal inheritance. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report Psychomotor: Practice |

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| | <i>Affective:</i> Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | 1.Sobir dan M. Syukur. 2015. Genetika Tanaman. IPB Press. Bogor. 2.Hartana, A. 1992. Genetika Tumbuhan. PAU Ilmu Hayat. Bogor. 3.Jusuf, M. 2001. Genetika I, Struktur & Ekspresi Gen. Sagung Seto. Jakarta. 4.Crowder, L.V. 1997. Genetika Tumbuhan (terjemahan). Gajah Mada University Press. Jogjakarta. 5.Griffiths, A.J.F, J.H. Miller, D.T. Suzuki, R.C. Lewontin and W.M. Gelbart. 1996. An Introduction to Genetic Analysis (Sixth Edition). W.H. Freeman and Company, New York. |

AGH250 Introduction to Seed Science and Technology

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| Module Name | Introduction to Seed Science and Technology |
| Module level | AGH Sp Spesific Course |
| Code | AGH250 |
| Subtitle | - |
| Courses, if applicable | AGH250 Introduction to Seed Science and Technology |
| Semester(s) in which the module is taught | 3 rd Semester |
| Person responsible for the module | Dr. Ir. Eny Widajati, MS |
| Lecturer | EWI, ERP, ASE, MRS, SIL, AQA, OSI, TKS, CBU, MSA, AZA, MSU, |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent : 5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After completing this course the students will gain knowledge of the importance of quality seed and seedling in agricultural production, seed formation and development, seed viability and vigor, as well as skill on seed viability and seed health testing, seed production and certification, seed processing, handling and storage; and an overview of seed program in Indonesia |
| Content | The course discusses the importance of quality seeds in crop production, seed formation and development, metabolism during seed germination, and seed dormancy, definition of seed viability and seed quality testing, procurement and monitoring of quality seeds that include production and certification, processing and storage), seed pest and diseases, and development of seed industry in Indonesia. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |

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| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <p>1.Esau, K. 1977. Anatomy of Seed Plants</p> <p>2.Faegri, K and van der Pijl, L. 1979. The Principles of Pollination Ecology</p> <p>Galston, AW. 1980. The Life of The Green Plant. Third Edition. Prentice-Hall, Inc., Englewood Cliffs, N.J.</p> <p>3.Gifford, EM and Foster, AS. 1988. Morphology and Evolution of Vascular Plant.</p> <p>Third Edition. WH Freeman & Co. NY</p> <p>4.Johri, BM (ed.). 1984. Embryology of Angiosperms. Springer-Verlag. Berlin Heidelberg</p> <p>5.Knox, RB. 1984. The Pollen Grain. In: Johri, BM (ed.) Embryology of Angiosperms. Springer-Verlag. Berlin Heidelberg</p> |

AGH211 Principles of Plant Breeding

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| Module Name | Principles of Plant Breeding |
| Module level | AGH SP Spesific course |
| Code | AGH211 |
| Subtitle | - |
| Courses | AGH211 Principles of Plant Breeding |
| Semester(s) in which the module is taught | 4th Semester |
| Person responsible for the module | Dr. Desta Wirnas, SP. Msi |
| Lecturer | SHS, SOB, MSY, HAS, DWI, TKO, YWE, SIA, WBS, SMA, AWR, EPR |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH210 |
| Module objectives/intended learning outcome | After completing this course, the students will be able to explain the meaning and scope of plant breeding science, plant breeding techniques and selection on self-pollinating plants, cross-pollination and vegetative propagation, utilization of mutation techniques, polyploidy and biotechnology in plant breeding, and also procedures release and protection of varieties |
| Content | This course teaches students the meaning and the scope of plant breeding science, plant improvement techniques and selection on self-pollinating plants, cross-pollination and vegetative propagation, the use of mutation techniques, polyploidy and biotechnology in plant breeding, as well as knowledge of variety release and protection procedures. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort (d) Team work |
| Media employed | Classical teaching tools with white board and power point presentation |

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| Reading list | <ol style="list-style-type: none"> 1. Chahal, G.S. and S.S. Gosal. 2002. Principles and Procedures of Plant Breeding: Biotechnological and Conventional Approach. Narosa Publishing, New Delhi. p. 604. 2. Darbeshwar, R. 2000. Plant Breeding. Analysis and Exploitation of Variation. Narosa Publishing, New Delhi. p 701. |
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AGH240 Fundamentals of Horticulture

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| Module Name | Fundamentals of Horticulture |
| Module level | AGH Sp Spesific Course |
| Code | AGH240 |
| Subtitle | - |
| Courses | AGH240 Fundamentals of Horticulture |
| Semester(s) in which the module is taught | 4th Semester |
| Person responsible for the module | Ir. Winarso D. Widodo, MS.PhD. (WDW) |
| Lecturer | AWR, AMA, DDI, WDW, JGK, SAM, MSR, AZA, OSI, CBU, BSP, SZA, NMA, DEF, DDM, DSU, AKU, KSU, EPR, SSU, ADS, NMA,DEF, DDI, SWA, AMA, SZA, JGK, |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH200 |
| Module objectives/intended learning outcome | The students are expected to be able to explain the characteristics of horticultural crops and the technology of production |
| Content | The course discusses the basic understanding and the scope of horticulture, horticultural crop characteristics and cultivation, horticultural crop production systems in Indonesia, the development of world and Indonesian horticulture and factors affecting them, as well as horticultural production technologies which include greenhouses, media and pots, hydroponics production, organic farming, selecting quality seeds, land preparation and planting, fertilizing, irrigation and fertigation, pruning, flowering and flower management and fruit management, harvesting and post-harvesting, and yard intensification. The students will learn the technical and practical aspects of horticulture in the intensive cultivation of horticultural crops during the practical. The prerequisite of the course is the Fundamentals of Agronomy. |

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| Study and examination requirement and forms of examination | <p>Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report</p> <p>Psychomotor: Practice</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort (d) Team work</p> |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <ol style="list-style-type: none"> 1. Poerwanto R, Susila AD. 2014. Seri I Hortikultura Tropika: Teknologi Hortikultura. IPB Press, Bogor. 420 hal 2. Janick J. 1986. Horticultural Science. W.H. Freeman. New York: US 746p. |

AGH241 Crop Production Techniques

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| Module Name | Crop Production Techniques |
| Module level | AGH SP Spesific Course |
| Code | AGH241 |
| Subtitle | - |
| Courses | AGH241 Crop Production Techniques |
| Semester(s) in which the module is taught | 4th Semester |
| Person responsible for the module | Dr Ir Ade Wachjar, MS. (AWA) |
| Lecturer | SUP, AWA, APL, PUR, HPU, SUG, ADS, DGU, WDW, |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH200 |
| Module objectives/intended learning outcome | After completing this course, the students will be able to explain both annual and perennial cultivation/production techniques in the field |
| Content | This course discusses crop cultivation techniques which include understanding the diversity in the production environment, land clearing, soil and water conservation, area measurement, land preparation, and soil tillage, preparation for planting and planting materials, crop maintenance, and crop rejuvenation techniques. Practical is focused on activities to deepen the understanding and practical techniques of crop production. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

AGH301 Field Trip

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| Module Name | Field Trip |
| Module level | AGH SP Spesific Course |
| Code | AGH301 |
| Subtitle | - |
| Courses | AGH301 Field Trip |
| Semester(s) in which the module is taught | 4th Semester |
| Person responsible for the module | Dr.Ir. Supijatno, MSi (SPJ) |
| Lecturer | SUP, APL, EWI, PUR, MSR, ASE,DEF, DSU, WDW, SZA, DGU, JGK, EPR, SUG, AKU |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Conduct field visits supervised by lecturers |
| Workload | 5 days x 8 hours = 40 hours |
| Credit points | 1 (0-3) sks |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After completing this course, the students will have insight and have the ability to explain the basic principles of managing agricultural crops in a holistic way |
| Content | This course provides students with the insights and understanding of the holistic aspects of agronomy, particularly regarding the management of crop production in the fields at an economical scale, and/or at research and development institutions. Implementation of the activities is field visits, preparing reports and evaluation of student reports. The site visits have been planned to vary from commercial companies, successful growers, and research/development institutions specialized in food crops, horticulture, plantations and seeds/young plant production. |
| Study and examination requirement and forms of examination | Cognitive: Individual Report Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | - |

AGH330 Fundamentals of Biotechnology

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| Module Name | Fundamentals of Biotechnology |
| Module level | AGH SP Spesific Course |
| Code | AGH330 |
| Subtitle | - |
| Courses | AGH330 Fundamentals of Biotechnology |
| Semester(s) in which the module is taught | 5th Semester |
| Person responsible for the module | Dr. Ni Made Armini Wiendi, MS (NMA) |
| Lecturer | NMA, DSU, APU, SWA, AMA, DEF, BSP, DDI, SUA, NKH, MSR, SAM, NAM |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After completing this subject, the students will have the ability to explain the concept and provide examples of plant biotechnology and have skills of biotechnology technique. Additionally, they are able to choose a specific technique in biotechnology to be applied for crops, plantation and horticultural crops. |
| Content | This course gives students knowledge about the meaning and scope of plant biotechnology and its application in agriculture. Topics include understanding of plant biotechnology, plant tissue culture, cell and tissue biological processes including organogenesis and embryogenesis in seed production in vitro, interactions between growth regulators with plant tissues, genes and DNA, induction of genetic diversity for in vitro breeding through somaclonal variations, culture protoplast, and gene transformation and its expression, secondary metabolite production in vitro, synthetic seed production, in vitro flowering, germplasm preservation, application of biotechnology in food crops, horticulture and plantations. Practicum: Students are expected to gain experience in applying simple techniques in plant biotechnology through individual works during the practicum sessions to allow a better understanding of the |

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| | theories and to gain skills in the practical aspects of plant biotechnology. |
| Study and examination requirement and forms of examination | <p>Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report</p> <p>Psychomotor: Practice</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.</p> |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <ol style="list-style-type: none"> 1. Wattimena GA et al. 2011. Biotechnology in Plant Breeding. IPB Press, ID 2. Wattimena GA et al. 2005. Plant Biotechnology. IPB Press, ID 3. Chrispeels, MJ and David ES. 2003. Plants Genes, and Crop Biotechnology. 2ed. Jone and Bartlett Pub., London 4. Chawla HS. 2002. Introduction to Plant Biotechnology. Science Publishers, Inc. USA. 5. Islam, A S. 2004. In Vitro Culture, Transformation and Molecular Markers for Crop Improvement. Science Publishers, Inc. USA 6. Kozai T., Afreen, F. And Zobayed SMA. Photoautotrophic (sugar- free medium) Micropropagation and Transplant Production System. Springer, The Netherland 7. Trigiano RN and Gray D. 2011. Plant Tissue Culture, Development, and Biotechnology. CRC Press, USA 8. Jain SM, Brar DS, Ahloowalla, BS. 1998. Somaclonal Variation and Induced Mutations in Crop Improvement. Kluwer Academic Publisher. USA |

AGH340 Food Crops Science

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| Module Name | Food Crops Science |
| Module level | AGH SP Spesific Course |
| Code | AGH340 |
| Subtitle | - |
| Courses, if applicable | Food Crops Science |
| Semester(s) in which the module is taught | 5 rd Semester |
| Person responsible for the module | Dr.Ir. Heni Purnamawati, MSc.Agr. (HPU) |
| Lecturer | DWI, PUR, SUG, APL, ILU, SUW, DGU, ASE, WBS, AJU, EPR, DDI, |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH200 |
| Module objectives/intended learning outcome | After completing this course, the student can identify the factors of food crop production and identify problems of crop production scientifically, and can apply the technology for production of important carbohydrates and proteins crops. The students are expected to able to manage food crop production businesses to produce maximum yield in sustainable agricultural systems |
| Content | The Food Crop Science course presents lecture material and practicum covering important cereals, nuts and tuberous crops that produce carbohydrates and proteins. The discussion includes their roles and functions, prospects and development in Indonesia, origin, and adaptation, botany, morphology and physiology, environment and growth requirements, crop production systems and cultivation techniques. The course materials need to be understood and mastered by students at the end of the course. Evaluation is conducted through group discussions, structured assignments, multiple-choice tests, and essays. Practicum is directed to add insights, increase the knowledge and skills of students about the subjects. Practicum material covers the cultivation of lowland rice and primary post-harvest |

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| | handling, dryland rice cultivation, legumes and tubers, and intercropping. |
| Study and examination requirement and forms of examination | <p>Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report</p> <p>Psychomotor: Practice</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.</p> |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <ol style="list-style-type: none"> 1.Undang-undang No 18 tahun 2012 tentang Ketahanan Pangan. 2.Badan Pusat Statistika tahun 2000-2013. 3.De Datta, S.K. 1981. Principles and Practices of Rice Production. John Wiley and Sons, Inc. Canada. 4.Gruben, GJH, Partohardjono, S. 1996. Cereals. Plant Resources of South East Asia. Prosea Foundation, Bogor Indonesia. Backhuys Publishers 5.Van der Messen, L.J.G. and S. Somaatmadja (Eds.). 1992. Plant Resources of South-East Asia (PROSEA) Vol. 1 Pulses. Prosea Foundation, Bogor Indonesia. 6.Flach, M. and F. Rumawas (Eds.). 1996. Plant Resources of South-East Asia (PROSEA) Vol. 9 Plants Yielding Non-seed Carbohydrates. Prosea Foundation, Bogor Indonesia. |

AGH320 Plant Ecology

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| Module Name | Plant Ecology |
| Module level | AGH SP Spesific course |
| Code | AGH320 |
| Subtitle | - |
| Courses | AGH320 Plant Ecology |
| Semester(s) in which the module is taught | 5th Semester |
| Person responsible for the module | Prof. Dr Ir Munif Ghulamahdi, MS (MGH) |
| Lecturer | MGH, SAA, MME, HAR, SUW, HAG, DSO |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH200 |
| Module objectives/intended learning outcome | After completing this course, the student will be able to apply the crop cultivation technique with existing components of the agricultural ecosystem to achieve high and sustainable agricultural production |
| Content | Agricultural Ecology course delivers classes and practicum on (a) agricultural ecosystems; (b) environmental factors affecting plants which include biotic factors (plants and plant pests) and abiotic factors (macroclimate, microclimate, water, soil); and (c) manipulation of cultivation to achieve high and sustainable crop production and optimal use of resources |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | Odum. 1962. Fundamental of Ecology. Wilsie, C.P. 1972. Crop Adaptation and Distribution. |

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| | <p>Cox, G. W. and M.D. Atkins. 1979. Agricultural Ecology: An Analysis of World Food Production Systems. W.H. Freeman and Co. San Francisco.</p> <p>Mengel, K. and E.A. Kirkby. 1982. Principles of Plant Nutrition. International Potash Institute. Switzerland.</p> <p>Marschner, H. 1986. Mineral Nutrition of Higher Plants. Academic Press. Harcourt Brace Jovanovich, Publ. London.</p> <p>Loomis, R.S. and D.J. Connor. 1992. Crop Ecology: Productivity and Management in Agricultural Systems. Cambridge Univ. Press.</p> <p>Gliessman, S.R. 2000. Agroecology: Ecological Processes in Sustainable Agriculture. Lewis Publ. Washington, D.C.</p> <p>Gurevitch, J., S.M. Scheiner, and G.A. Fox. 2002. The Ecology of Plants. Sinauer Associates, Inc., Publ. Sunderland, Massachusetts USA.</p> |
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AGH321 Weed Science

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| Module Name | Weed Science |
| Module level | AGH SP Spesific Course |
| Code | AGH321 |
| Subtitle | |
| Courses | AGH321 Weed Science |
| Semester(s) in which the module is taught | 5th Semester |
| Person responsible for the module | Prof. Dr. Ir. M.A. Chozin, MAgr (MAC) |
| Lecturer | ESA, MAC, APL, SZA, DGU |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH200 |
| Module objectives/intended learning outcome | After completing this course, the students are expected to be able to explain about weeds in various agricultural systems and weed control strategy |
| Content | This lecture discusses the definition of weeds, the benefits and disadvantages of weeds in agriculture, biological and ecological aspects of weeds, ways to control weeds (technical and biological culture), herbicide classification, herbicide properties, and the use of herbicides in agriculture, weed control in food crops , plantations and horticulture, as well as in water systems. Practical activities are directed at developing insight and improving student skills in various weed control technics. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | 1.Zimdahl, R.L. 2007. Fundamentals of Weed Science. |

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| | <p>2.Thomas J. Monaco, dkk. 2002. Weed Science : Principles and Practice.</p> <p>3.Radosevich et. al. 2007. Weed Ecology : implication for management. John Wiley & Son. New York</p> <p>4.Auld, BA, KM. Menz, CA. Tisdell. 1987. Weed Control Economic.</p> <p>5.Duke. SO. 1996. Herbicide-Resistant Crop.</p> <p>6.Philips, RE., SH. Philips. 1984. No Tillage Agriculture. Principle and Practical. Van Nostrand Reinhold Co., New York.</p> <p>7.Sastroutomo, SS. 1990. Ekologi Gulma. Gramedia. Jakarta.</p> |
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AGH401 Integrated Farming

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| Module Name | Integrated Farming |
| Module level | AGH SP Spesific Course |
| Code | AGH401 |
| Subtitle | - |
| Courses | AGH401 Integrated Farming |
| Semester(s) in which the module is taught | 6 rd Semester |
| Person responsible for the module | Dr. Ir. Herdhata Agusta (HAG) |
| Lecturer | WDW, AJU, MGH, PUR, SUW, SUP, HAR, ASE, MHB, AQA, SUD, SZA, MSU, DDM, HAG, ESA, SUG, SOB, SAM, AWR, AZA |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :2.7 hours x 14 weeks = 37.8 hours Practicum : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 69.8 hours |
| Credit points | 2 (1-2) SCH = 2.3 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | The students are be able to and trained to: (1) explain the principles and holistic integrated farming systems, integration systems and justify the level of cohesiveness, (2) explain the flow system (cycle) and nutrients, air, energy and agricultural products balance including of the principles " Life Cycle Assessment "and footprints: air, energy, carbon and Nitrogen, both in agroforestry, agropastoral and agrofiseries systems and their combinations, (3) plan, design and evaluate integrated farming systems and arrange the dynamic models of integrated farming systems that the whole plant based towards sustainable agriculture systems. |
| Content | This course discusses the definition and scope of integrated agriculture; the types and characteristics of integrated agriculture versus monoculture agriculture, the principle of integration in agricultural production (agroforestry, agro pasture, agro fisheries), silviculture, ecological engineering in integrated farming development, concepts of integrated agricultural, principles in integrated agriculture, optimation of integrated agriculture, normative steps in integrated farming; study cases and financial feasibility of integrated farming in wetlands and drylands, the direction of integrated |

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| | agriculture research, energy, water, carbon and nitrogen footprint. |
| Study and examination requirement and forms of examination | <p>Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report</p> <p>Psychomotor: Practice</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.</p> |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <p>Reijntjes, C., B. Haverkort, and A. Water-Bayer. 1992. Farming for The Future: An Introduction to Low-External-Input and Sustainable Agriculture. MacMillan and ILEIA. Leusden. 250p.</p> <p>2. LITTLE, DC AND P. EDWARDS. 2003. Integrated livestock-fish farming systems. FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. ROME</p> <p>3. AGRICULTURE ENTERPRISE DEVELOPMENT FOR RURAL BELIZE (AED. 2010.)A Manual on Integrated Farming Systems (IFS). Belize.</p> <p>4. European Commission DG Environment. 2002. INTEGRATED CROP MANAGEMENT SYSTEMS in the EU</p> <p>5. Boller EF, J. Avilla, E. Joerg, C. Malavolta, F.G. Wijnands & P. Esbjerg. 2004. Integrated Production Principles and Technical Guidelines . The International Organization for Biological and Integrated Control of Noxious Animals and Plants, West Palearctic Regional Section (IOBC/WPRS). Waedenwills. Switzerland.</p> |

AGH322 Water and Nutrition Management

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| Module Name | Water and Nutrition Management |
| Module level | AGH SP Spesific Course |
| Code | AGH322 |
| Subtitle | - |
| Courses | AGH322 Water and Nutrition Management |
| Semester(s) in which the module is taught | 6 rd Semester |
| Person responsible for the module | Dr. Ir. Eko Sulistyono, MSi (ESU) |
| Lecturer | ESU, DSO, ESA, SSU, SWA,SUD, AKU, HAG, JGK |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH200 AGH240 |
| Module objectives/intended learning outcome | 1. Have skills to identify and calculate the availability of water and nutrient sources for crops in the field 2. Have the ability to calculate the water requirements and nutrients 3. Have the ability to analyze the physiological, morphological and anatomical responses of crops to water and plant nutrients, and 4. Have skills to solve the lack or excess of water and nutrients to manage water and nutrients based on the requirements of the crops through various methods of irrigation, drainage and fertilization |
| Content | The Plant Water and Nutrition Management course discusses the development of water and nutrient resources, crop water requirements, plant response to water, irrigation and drainage systems, nutrient uptake by roots and fertilization through leaves, distant and close transport, Rhizosphere, nutrient solutions, root structures and root development, nitrogen fixation, macro and micronutrient functions, symptoms of deficiency and toxicity, as well as factors that affect nutrient availability, nutrient balance and water use efficiency, relations of water, nutrients and crop yield. |

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| Study and examination requirement and forms of examination | <p>Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report</p> <p>Psychomotor: Practice</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.</p> |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <ol style="list-style-type: none"> 1. Ayers, R.S. and D.W. Westcot. 1976. Water Quality for Agriculture. FAO, Roma. 97 hal. 2. Valmayor, R.V. 1986. Smal Water Impounding Projects. PCARD, Phillippines. 47 p. 3. Doorenbos, J and A.H. Kassam. 1979. Yield Response to Water. FAO, Roma. 193 p. 4. Doorenbos, J. and W.O. Pruite. 1977. Crop Water Requirement. FAO, Roma. 144 p. 5. Stern, P.H. 1987. Small Scale Irrigation. IT Publication. Nottingham. 152 p. 6. Sugi, J. 1980. Planning for An Irrigation System. Tokyo Agric. Univ. Press. Tokyo. 230 p. 7. Marschner H. 1986. Mineral Nutrient in Higher Plants. Acad Press. New York. 674 p. 8. Kramer P.J. 1969. Plant & Soil Water Relationship. Mc. Graw Hill Book. 482 p. |

AGH331 Plant Propagation

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| Module Name | Plant Propagation |
| Module level | AGH SP Spesific Course |
| Code | AGH331 |
| Subtitle | - |
| Courses | AGH331 Plant Propagation |
| Semester(s) in which the module is taught | 6 rd Semester |
| Person responsible for the module | Dr. Awang Maharijaya, SP.MSi. (AMA |
| Lecturer | WDW, AKU, DSU, AMA, APU, DDI, DEF, SWA, NMA, KSU, JGK, MSR, EPR, SAM, RPO |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-1) sks |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH200 AGH240 |
| Module objectives/intended learning outcome | After completing this course, the students can explain the biological and physiological aspects of conventional plant culture and tissue culture, the reasons and objectives of each method including their advantages and disadvantages, and have the ability to design a tissue culture laboratory and to do tissue culture techniques of certain species |
| Content | This lecture discusses general concepts about vegetative and generative plant propagation. Vegetative propagation topics cover both conventional and tissue culture propagation techniques along with the biological and physiological aspects underlying them, objectives, applications, including advantages and disadvantages of each technic. The discussion topics are emphasized on conventional vegetative propagation technics (cuttings, grafting, budding, and attachment), propagation of specific plant organs, apomictic and tissue culture techniques (organogenesis, embryogenesis), laboratory facilities, aseptic techniques, tissue culture media and tissue substances growth regulators, factors affecting organogenesis and embryogenesis, and the production of quality plant material (free of disease). Generative propagation discusses pollination, seed |

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| | formation, seed development, certified seed production, processing and storage of seeds. |
| Study and examination requirement and forms of examination | <i>Cognitive:</i> Mid term exam, Final exam, Quizzes, Assignments, practicum report <i>Psychomotor:</i> Practice <i>Affective:</i> Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

AGH341 Plantation Crops

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| Module Name | Plantation Crops |
| Module level | AGH SP Spesific Course |
| Code | AGH341 |
| Subtitle | - |
| Courses | AGH341 Plantation Crops |
| Semester(s) in which the module is taught | 6 rd Semester |
| Person responsible for the module | Dr.Ir. Supijatno, MSi (SUP) |
| Lecturer | SYA, SUG, SUP, AWA, DGU, HAR, SUW, AJU, SZA, SUD, APL, DDM |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH200 |
| Module objectives/intended learning outcome | 1. Have the ability to explain the plantation development system and the criteria of Plantation crops (oil palm, rubber and coconut) 2. Understand the origin, botany and ecophysiology of estate crops in relation to the good management of estate crops 3. Understand the plantation business development planning while using natural resources optimally 4. Have understanding of how to manage a sustainable estate crop production systems while obtaining high yields |
| Content | This course teaches students the origin, economic value, botany and ecophysiology of the main plantation crops, coconut, oil palm, and rubber as well as cultivation techniques starting from preparation and procurement of plant materials, land preparation, planting, maintenance, harvesting and primary processing of these three main plantation crops. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) |

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| | Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

AGH398 Scientific Writing Techniques

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| Module Name | Scientific Writing Techniques |
| Module level | AGH SP Spesific Course |
| Code | AGH398 |
| Subtitle | - |
| Courses | AGH398 Scientific Writing Techniques |
| Semester(s) in which the module is taught | 6 rd Semester |
| Person responsible for the module | Dr Ir. Ketty Suketi, MSi (KSU) |
| Lecturer | DDI, MME, AMA, KSU, WDW, NMA, ERP, AKU, JGK, YWE, RPO, SAA, MAC, MGH, PUR, ASE, SAM, HPU, APL, TKO |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent : 2.7 hours x 14 weeks = 37.8 hours Class Discussion : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 69.8 hours |
| Credit points | 2 (1-2) SCH = 2.3 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | STK 222 |
| Module objectives/intended learning outcome | After completing this subject, the student will have the competence to prepare research proposals, plan a research, submit research results in writing in the form of a thesis, prepare and present scientific papers for seminar and publication |
| Content | This course is a general service for the students before they start their final project in research or internship under the guidance of a supervisor. The course covers the basics and techniques of scientific writing, library research, preparation of research proposals/internships, and preparation for the presentation of research results. Practicum: This course provided students with the opportunity to practice the technics of scientific writing, so at the end of the course the students can produce scientific reports. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, reseach proposal Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |

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| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | Panduan Penulisan Karya Ilmiah . 2013. IPB Press, Bogor |

AGH403 Agricultural Production and Business Practices

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| Module Name | Agricultural Production and Business Practices |
| Module level | AGH SP Spesific Course |
| Code | AGH403 |
| Subtitle | - |
| Courses | AGH403 Agricultural Production Business Practices |
| Semester(s) in which the module is taught | 7th Semester |
| Person responsible for the module | Dr. Ir. Iskandar Lubis, MS (ILU) |
| Lecturer | JGK, MSR, NMA. ILU, NKH, AKU, DSU, SUW, SUG |
| Language | Indonesian |
| Relation to curriculum | Compulsory Practices for undergraduate program in business of agricultural product |
| Type of teaching, contact hours | Practicum (field practice): 6 hours x 14 weeks per semester |
| Workload | Agricultural business practices Total = 6 hours x 14 weeks = 84 hours |
| Credit points | 2 (0-2) SCH = 2.8 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH200 AGH240 AGH241 |
| Module objectives/intended learning outcome | <ul style="list-style-type: none"> After following this course, the student can plan and conduct crop production processes to obtain maximum production, can identify and analyze problems that arise and determine the best solution in managing crop production businesses |
| Content | This course provides the students to implement farming activities in the field by being involved in the processes of crop production from planning to the evaluation of an agricultural business. |
| Study and examination requirement and forms of examination | Cognitive: Group report, presentation Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | LCD and power point presentation |
| Reading list | - |

AGH440 Post Harvest Technology

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| Module Name | Post Harvest Technology |
| Module level | AGH Sp Spesific Course |
| Code | AGH440 |
| Subtitle | - |
| Courses | AGH440 Post Harvest Technology |
| Semester(s) in which the module is taught | 7th Semester |
| Person responsible for the module | Dr Ir Sugiyanta, MS (SUG) |
| Lecturer | SUG, BSP, SSU, HPU, DSU, JGK, AWA, HAR, SPJ |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum : 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After completing this course, the student will be able to explain post-harvest handling techniques of agricultural crops |
| Content | This course discusses the basics of post-harvest agricultural produce and techniques for handling post-harvest produces. The basics of postharvest agricultural products include the definition and scope of postharvest agricultural products that include cleaning, sorting and grading, drying, grinding (size reduction), quality management, packing, and storage. Post-harvest handling techniques of specific products include the physicochemical nature of materials and commodity-specific post-harvest handling techniques (food, horticulture, and plantations). Practicum activities give the students the opportunity to expand the views on postharvest handling and to improve skills in postharvest handling techniques for selected crops, especially in determining the maturity, sorting, drying, grinding and final yield, as well as analyzing/determining the quality of the produce. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report, presentation Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, |

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| | active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

AGH341 Crop Production Management

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| Module Name | Crop Production Management |
| Module level | AGH Spesific Course |
| Code | AGH441 |
| Subtitle | - |
| Courses | AGH341 Crop Production Management |
| Semester(s) in which the module is taught | 7th Semester |
| Person responsible for the module | Dr Ir Ahmad Junaedi, M.Si (AJU) |
| Lecturer | AJU, DDM, AWA, SUP, RPO, AWR, Tintin Sariyanti, SP. MSi |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Class Discussion: 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 106.7 hours |
| Credit points | 3 (2-2) SCH = 3.6 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH240 AGH340 AGH341 |
| Module objectives/intended learning outcome | <ul style="list-style-type: none"> After following this course, the student can plan, design and evaluate the performance of a crop production system. |
| Content | The lecture discusses the definition and scope of crop production management, crop production systems, agricultural business planning, production field management, financial management, investment analysis and agricultural project planning studies, personnel management of agricultural companies, quality management in crop production, and supply chain management. In the practicum, a simulation will be made to create an imaginary farming company, prepare a feasibility study for the company, and simulation of applying for business credit to the bank. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, presertation Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |

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| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

AGH402 Capita Selecta of Agriculture

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| Module Name | Capita Selecta of Agriculture |
| Module level | AGH SP Spesific Course |
| Code | AGH402 |
| Subtitle | - |
| Courses | AGH402 Capita Selecta of Agriculture |
| Semester(s) in which the module is taught | 7th Semester |
| Person responsible for the module | Prof. Dr Ir Memen Surahman, M.ScAgr (MSU) |
| Lecturer | SUD, MSU, BWI, PUR, HAR, SOB, ADS |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture and discussion : 100 minutes x 7 weeks per semester |
| Workload | Class lecture 1.7 hours x 7 weeks |
| Credit points | 1 (1-0)SCH = 0.4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | <ul style="list-style-type: none"> • Improve the knowledge and insight about agriculture in a broad sense. • Improve the ability to work in team. • Improve the leadership abilities. • Improve the communication skills • Improve the ability to manage a scientific meeting |
| Content | Capita Selecta in Agriculture course presents material on agricultural development in developed countries, government policies and programs in agricultural development, policies, and programs for food and energy security, business financing in agriculture, risk management, opportunities and challenges of plantation and horticultural crops, and national regulations in agriculture and plantations. |
| Study and examination requirement and forms of examination | Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

AGH342 Vegetable Crops Production

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| Module Name | Vegetable Crops Production |
| Module level | AGH Spesific Course, Elective Course |
| Code | AGH342 |
| Subtitle | - |
| Courses | AGH342 Vegetable Crops Production |
| Semester(s) in which the module is taught | 6 rd Semester |
| Person responsible for the module | Prof. Dr. Ir. Anas Dinurrohman Susila, MSi (ADS) |
| Lecturer | ADS, JGK, RPO, WDW, AKU, KSU |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent : 5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH= 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH240 |
| Module objectives/intended learning outcome | By the end of the course the student have the ability to manage a vegetable production business to produce maximum yield with high quality in a sustainable agriculture system. The students understand the methods to identify the characteristics of vegetable crops, their genetic potentials and utilization The student understand the science and technology of primary crop production and post-harvest vegetables The student can evaluate the process of vegetable production |
| Content | This course discusses comprehensively the main vegetable commodities and exotic vegetables that are cultivated in Indonesia and in the world. The course covers aspects of crop production technology (nurseries, planting systems, fertilization, irrigation, weed control, pest and disease control, harvesting), physiology, ecology, botany, seedling and breeding, post-harvest, and marketing. In the practicum, the students are provided with the opportunity to do up planning and analysis of a vegetable production system, and to practice the technics of growing vegetable crops. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report Psychomotor: Practice |

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| | <i>Affective:</i> Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | 1.AVRDC. 1992. Vegetable Production Training Manual. Bab 7,8,9 2.Maynard, D.N., and G.J. Hochmuth. 2000. Vegetables Production Guide. |

AGH350 Seed Production and Processing

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| Module Name | Seed Production and Processing |
| Module level | AGH Spesific Course, Elective Course |
| Code | AGH350 |
| Subtitle | - |
| Courses | AGH350 Seed Production and Processing |
| Semester(s) in which the module is taught | 6 rd Semester |
| Person responsible for the module | Dr Ir Abdul Qadir, MS (AQA) |
| Lecturer | AQA, MRS, MSU, CBU, AZA |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH250 |
| Module objectives/intended learning outcome | After completing this course, the student can explain about the production and processing of non-hybrid and hybrid quality seeds, and the basic management of a seed processing unit |
| Content | Seed Production and Processing course discuss the definition of seeds, seed production management systems, agronomic and genetic principles in seed production, non-hybrid plant seed production, hybrid plant seed production, seed processing, seed processing mechanism, and management of seed processing units. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | 1.Direktorat Jenderal Tanaman Pangan. 1991. Petunjuk Pengawas Benih. 2.George, R. A. T. 1985. Vegetable Seed Production. 3.Kelly, A. F. 1988. Seed Production of Agricultural Crop. |

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| | <p>4.Mugnisjah, W. Q., dan A. Setiawan. 1996. Pengantar Produksi Benih.</p> <p>5.Produksi Padi dan Palawija. Sub Dir Pengawasan Mutu dan Sertifikasi Benih.</p> <p>6.Sadjad, S. 1993. Dari Benih Kepada Benih.</p> <p>7.Undang-undang Republik Indonesia Nomor 12 Tahun 1992.</p> <p>8.Wirawan, B. Dan S. Wahyuni. 2002. Memproduksi Benih Bersertifikat : Padi, Jagung, Kedelai.</p> <p>9.Mohammad Lassim, M. 1987. Seed Processing Training at Institut Pertanian Bogor. IPB. Bogor.</p> <p>10.Desai, B. B., P. M. Kotecha, and D. K. Salunkhe. 1997. Seeds Handbook.</p> |
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AGH343 Floriculture

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| Module Name | Floriculture |
| Module level | AGH Spesific Course, Elective Course |
| Code | AGH343 |
| Subtitle | - |
| Courses | AGH343 Floriculture |
| Semester(s) in which the module is taught | 6 rd Semester |
| Person responsible for the module | Dr Ir Ketty Suketi, MS (KSU) |
| Lecturer | KSU, DSU, JGK, SIA, KRI |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH240 |
| Module objectives/intended learning outcome | After completing this course, the student can explain the definition and scope of horticulture, botany, growing requirements, types, and techniques of cultivation of ornamental plants and important flowers and physiology / post-harvest handling and management of flower and ornamental plant business |
| Content | This lecture discusses aspects in the cultivation of flowers and ornamental plants comprehensively, including botany, physiology, ecology, breeding, the supply of plant/seed material, planting, fertilizing, irrigation, special treatment for flowering or maintaining vegetative growth, pest and disease control, harvesting, post-harvest treatment, and marketing. The course focuses on economically important ornamental species including orchids, chrysanthemums, carnation, lily, gerbera, heliconia, bedding plants, indoor and landscape plants, and aromatic ornamentals. This course also includes the management of flower and ornamental business. Practical is directed at expanding students vies and improving student skills in important aspects of ornamental plants and flower production. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report, presentation Psychomotor: Practice |

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| | <i>Affective:</i> Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | |

AGH344 Non-seed Carbohydrate and Sweeteners

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| Module Name | Non-seed Carbohydrate and Sweeteners |
| Module level | AGH Spesific Course, Elective Course |
| Code | AGH344 |
| Subtitle | - |
| Courses | AGH344 Non-seed Carbohydrate and Sweeteners |
| Semester(s) in which the module is taught | 6 rd Semester |
| Person responsible for the module | Dr.Ir. Purwono, MS(PUR) |
| Lecturer | PUR, ILU, APL, SAM, HPU, SUW |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH200 |
| Module objectives/intended learning outcome | After completing this course, the student can explain the crops that are sources of carbohydrate, economic definition, potentials, carbohydrate metabolism processes in plants, production systems and processing methods of carbohydrate products as sweeteners |
| Content | This course discusses the importance of carbohydrate crops, types of carbohydrates derived from tubers, stems, and other plant parts, as well as carbohydrate metabolism in plants. Included in the course are the area of origin, botany, growing environmental, crop production starting from the preparation of plant materials to processing. Crops included in the course are tuberous crops (cassava, sweet potato, and taro), Palmae (Sago), Graminae (sugar cane). |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report, presentation Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |

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| Reading list | <p>1)Barnes, A. C. 1974. The Sugarcane. Leonard Hill Book. London.</p> <p>2)Cock, J.H. 1985. Cassava, New Potential for A Neglected Crop. Westview. Boulder. Colorado. United States. 205p.</p> <p>3)Flach, M. and F. Rumawas. (Eds.) 1996. Plant Yield Non-Seed Carbohydrate. Plant Resources of South-East Asia. No. 9. Backhuys Publisher. Leiden. 240p.</p> <p>4)Lehninger, A.L. 1991. Dasar-dasar Biokimia (terjemahan M. Thenawidjaja). Penerbit Erlangga. Jakarta.</p> <p>5)Ochse, J.J. and Bakhuizen van den Brink, R.C. 1980. Vegetables of The Dutch East Indies. Asher and Co. Amsterdam. The Netherland.</p> <p>6)Onwueme, I. C. 1978. The Tropical Tuber Crops. John Wiley and Sons. Chicester. United Kingdom.</p> <p>7)Purseglove, J.W. 1972. Tropical Crops. Longman. London. United Kingdom.</p> <p>8)Purwono dan S. Sudiarto. 2002. Budidaya Tanaman Tebu. Jurusan Budidaya pertanian, Faperta IPB.</p> <p>9)Sudiarto, S. 1999. Tanaman Baku Pemanis dan Produksi Pemanis. Jurusan Budidaya Pertanian, Faperta IPB</p> <p>10)Tim Gula IPB. 2002. Agribisnis dan Agroindustri Pergulaan Nasional. Lembaga Penelitian IPB.</p> <p>11)Vickery, L. and B. Vickery. 1981. Secondary Plant Metabolism. Univ. Park Press. Baltimore.</p> <p>12)Wang, J.K. (Ed.). 1983. Taro, A Review of Colocasia esculenta and Its Potentials. University of Hawaii Press. Hawaii. 400p.</p> <p>13)Woolfe, J.A. 1992. Sweet Potato An Untapped Food Resource. Cambridge University Press. Cambridge. 640p.</p> |
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AGH450 Seed Storage and Testing

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| Module Name | Seed Storage and Testing |
| Module level | AGH Spesific Course, Elective Course |
| Code | AGH450 |
| Subtitle | |
| Courses | AGH450 Seed Storage and Testing |
| Semester(s) in which the module is taught | 5/7 th Semester |
| Person responsible for the module | Prof Dr Ir Satryas Ilyas, MSc (SIL) |
| Lecturer | SIL, ERP, AZA, |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH250 |
| Module objectives/intended learning outcome | After completing this course, the student will be able to describe the standards, procedures, and quality testing method, and controlling environmental factors to ensure the seed quality. |
| Content | This course discusses (1) seed quality and the factors that influence it; (2) principles and standardization of seed testing; (3) procedures for seed sampling; (4) different methods of physical, genetic, physiological and pathological seed quality testing; (5) storage purposes in relation to seed characteristics; (6) factors that affect seed shelf life and its management (7) estimating the storability of qualitative and quantitative seeds; (8) seed storage techniques; and (9) seed quality control. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report, presentation Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |

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| Reading list | <ol style="list-style-type: none"> 1.[AOSA] Association of Official Seed Analysts. 1983. Seed Vigor Testing Handbook. No. 32. 2.Chin, H. F and E. H. Robert. 1980. Recalcitrant Crop Seeds. Tropical Press Sdn. Bhd. 152p. 3.Copeland, L.O. and M.B. McDonald. 2004. Principles of Seed Science and Technology. 4th Ed. Chapman & Hall. 4. Farrant, J. M., N. W. Pammenter, and P. Berjak. 1988. Recalcitrance - a current assessment. Seed Sci & Technol., 16, 155-166. 5.Grabe., D. F. 1978. The GADA Test for Seed Storability, Seed Technology Laboratory, Mississippi. 14p. 6.Ilyas, S. dan E. Widajati. 2015. Teknik dan Prosedur Pengujian Mutu Benih Tanaman Pangan. 2015. IPB Press. 7.Ilyas, S. 2004. Pentingnya Mutu Benih. Makalah pada Pelatihan Petugas Pengambil Contoh Benih Tanaman Pangan dan Horticultura. Dirjen Bina Produksi Tanaman Pangan, Deptan. Ciawi, 28 Juni – 1 Juli 2004. 8.[ISTA] International Seed Testing Association. 2014. International Rules for Seed Testing. 9.Justice, O. L and L. N. Bass. 1990. Prinsip dan Praktek Penyimpanan Benih. Terjemahan. Penerbit CV. Rajawali. 446p. 10.Mamicpic, N. G. 1988. Seed Storage. Seed Analysis and Production Lab., Institut Pertanian Bogor. Bogor. 260p. 11.Roberts, E. H. 1972. Seed Viability. Chapman and Hall. London. 440p. 12.Sadjad, S. 1994. Kuantifikasi Metabolisme Benih. PT. Gramedia Widiasarana, Jakarta. |
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AGH410 Applied Plant Breeding

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| Module Name | Applied Plant Breeding |
| Module level | AGH Spesific Course, Elective Course |
| Code | AGH410 |
| Subtitle | - |
| Courses | AGH410 Applied Plant Breeding |
| Semester(s) in which the module is taught | 6 rd Semester |
| Person responsible for the module | Dr. Ir. Yudiwanti Wahyu E.K., MS (YWE) |
| Lecturer | YWE, WBS, DWI |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH211 STK222 |
| Module objectives/intended learning outcome | After completing this course the student will be able to explain the stages of plant breeding, breeding for stress environent, participatory plant breeding, conservation techniques for breeding, germplasm resources, and the use of biotechnology in plant breeding |
| Content | This course teaches effective and efficient methods of engineering superior cultivars that are adaptive and genetically stable, including the stages of genetic diversity formation, selection and testing, conservation techniques for breeding germplasm resources, and the use of biotechnology in plant breeding. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report, presentation Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort. |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | 1. Agrios, G.N. 1988. <i>Plant Pathology</i> . California (US):Academic Press. |

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| | <ol style="list-style-type: none"> 2. Allard, R.W. 1960. <i>Principles of Plant Breeding</i>. New York (US):John Wiley & Sons, Inc.. 3. Almekinders, C.J.M. and A. Elings. 2001. Collaboration of farmers and breeders : participatory crop improvement in perspective. <i>Euphytica</i>. 122: 425-438. 4. Bari, A., S. Musa, dan E. Sjamsudin. 1974. <i>Diktat Pengantar Pemuliaan Tanaman</i>. Bogor (ID): Fakultas Pertanian IPB. 5. Banziger M. and M. Cooper. 2001. Breeding for low input conditions and consequences for participatory breeding. <i>Euphytica</i>. 122 : 503-519. 6. Ceccarelli, S. 1996. Adaptation to low/high input cultivation. <i>Euphytica</i>. 92:203-214. 7. Ceccarelli, S. 1994. Specific adaptation and breeding for marginal conditions. <i>Euphytica</i> 77:205-209. 8. Ceccarelli, S.; S. Grando and A. Impiglia. 1998. Choice of selection strategy in breeding barley for stress environments. <i>Euphytica</i>. 103: 307-318 9. Falconer, D.S. and T.F.C. Mackay. 1996. <i>Introduction to Quantitative Genetics</i>. 4th ed. Harlow (US):Longman. 10. Finlay, K.W. and G.N. Wilkinson. 1963. The analysis of adaptation in a plant breeding programme. <i>Australian J. Agric. Res.</i> 14:742-754. 11. Gomez, K.A. dan A.A. Gomez. 1995. <i>Prosedur Statistika untuk Penelitian Pertanian</i> (diterjemahkan oleh E. Sjamsudin dan J.S. Baharsjah). Jakarta (ID):UI Press. 12. Hayward, M..D., N.O. Bosemark, dan I. Romagosa. 1993. <i>Plant Breeding: Principles and Prospects</i>. London (GB):Chapman and Hall. 13. Mak, C., B.L. Haveys, and J.D. Berdahl. 1978. An evaluation of control plot and moving means for error control in barley nurseries. <i>Crop Sci.</i> 18:870-873. 14. Phoelman, J.M and D.A. Sleper. 1995. <i>Breeding Field Crops</i>. Ames (US):Iowa State Univ. Press. 15. Rosielle, A.A. 1979. Comparison of lattice designs, check plots, and movingmeans in wheat breeding trials. <i>Euphytica</i>. 29:129-133. 16. Robinson, R. 2013. <i>Returne to Resistance: Breeding Crops to Reduce Pesticide Usage</i>. Ontario (CA):Sharebooks Publ. 17. Spehar, C.R. 1994. Field screening of soya bean (<i>Glycine max</i> (L.) Merr.) germplasm for aluminium tolerance by the use of augmented design. <i>Euphytica</i>. 76:203-213. 18. Steel, R.G.D. and J.H. Torrie. 1980. <i>Principles and Procedures of Statistics</i>. London (GB):McGraw-Hall Internat. Book Co. |
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AGH442 Pomology

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| Module Name | Pomology |
| Module level | AGH Spesific Course, Elective Course |
| Code | AGH442 |
| Subtitle | - |
| Courses | AGH442 Pomology |
| Semester(s) in which the module is taught | 7 th Semester |
| Person responsible for the module | Ir. Winarso D. Widodo, MS.PhD. (WDW) |
| Lecturer | WDW, DDM, KSU, AKU,RPO, AKU |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCG = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | AGH240 |
| Module objectives/intended learning outcome | 1. Fruit Biology Competence: being able to explain the ecology of tropical fruit plants, physiology of plant growth, the process of flowering and fruiting, fruit growth and development, postharvest physiology. 2. Orchard Management Competence: being able to explain the principles of orchard management starting from the selection of the location of the garden, nursery, plant cultivation till harvest and post-harvest handling. 3. Competence of Agribusiness / Tropical Fruit Farming: being able to explain the agribusiness system of important tropical fruits in Indonesia and its role in national and international trade, growth requirements, botany, growth management, nursery management and orchard management. 4. Practical Skills: being able to plant and maintain selected fruit crops and apply the management of tropical fruit farming both in monoculture, intercropping of fruit with vegetable crops and potted fruit trees. |
| Content | The AGH442 course is a continuation of the Horticulture Fundamentals course (AGH242) which aims to explore the science of fruit plants (Pomology). Students who have passed Plant Cultivation Engineering (AGH 241) and Plant Breeding (AGH331) will be benefited to take this course. This course |

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| | teaches the environment for growing tropical fruits, the process of flowering and fruit formation, growth and development of tropical fruit trees, fruit growth and development, fruit harvest and post-harvest, and agribusiness of several important fruit types in Indonesia. In addition to lectures in class, students will conduct fieldwork to study the morphology and anatomy of several tropical fruit species and the practice of cultivating some fruit crops. |
| Study and examination requirement and forms of examination | <p>Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report</p> <p>Psychomotor: Practice</p> <p>Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort (d) Team work</p> |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | <p>1.Samson, J. A. 1989. Tropical Fruits. Longman Sci. Tech. New York. Bab 1-4 dan 7</p> <p>2.Ryugo, K. Fruit Culture, Its Science and Art. John Wiley & Sons. New York. Bab 1 – 10</p> <p>3.Coronel, R. E. 1986. Promising Fruits of the Philippines. College of Agriculture, UPLB. Bab 8, 13, 16.</p> <p>4.Hartmann, H. T., D. E. Kester and F. T. Davies, Jr. 1990. Plant Propagation: Principles and Practices. Prentice/Hall Int'l. Inc. Bab 2</p> <p>5.Bernier, G., J. M. Kinet and R. M. Sachs. 1985. The Physiology of Flowering. CRC Press. Inc. Florida. Bab 2 dan 6</p> <p>6.Hulme, A. C. 1970. The Biochemistry of Fruits and their Products. Acad. Press. London. Bab 14 dan 15.</p> <p>7.Moore, J. N. and J. Janick. 1983. Methods in Fruit Breeding. Purdue Univ. Press. Indiana. Bab 2, 4, 5</p> <p>8.Leopold, A. C. and P. E. Kreidemann. 1975. Plant Growth and Development. McGraw-Hill, New York. Bab 10 – 13</p> <p>9.Goldsworthy, P. R. and N. M. Fisher. 1992. Fisiologi Tanaman Budidaya Tropik. Gajah Mada Univ. Press (terjemahan).</p> |

AGH443 Medicinal, Beverage, and Aromatic Crops

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| Module Name | Medicinal, Beverage, and Aromatic Crops |
| Module level | AGH Spesific Course, Elective Course |
| Code | AGH443 |
| Subtitle | - |
| Courses | AGH443 Medicinal, Beverage, and Aromatic Crops |
| Semester(s) in which the module is taught | 7th Semester |
| Person responsible for the module | Dr Ir Ani Kurniawati, MSi (AKU) |
| Lecturer | AKU, AWA |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Lecture (Face to face lecture): 100 minutes x 14 weeks per semester Practicum (field practice): 3 hours x 14 weeks per semester |
| Workload | Class (lecture, assignment, independent :5.3 hours x 14 weeks = 74.7 hours Practicum : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 120.7 hours |
| Credit points | 3 (2-3) SCH = 4 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course 2. Minimum 80% attendance in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | After completing this course, the student can plan the production system of beverage, medicinal and aromatic medicinal crops and manage their post-harvest handling |
| Content | This course teaches students the scope and significance of beverage, medicinal and aromatic crops with a focus on phytochemical content and uses, an overview of beverage, medicinal and aromatic crops from the aspects of botany, ecology, and agronomy; cultivation and handling of post-harvest beverage, medicinal and aromatic crops. |
| Study and examination requirement and forms of examination | Cognitive: Mid term exam, Final exam, Quizzes, Assignments, practicum report, presentation Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort (d) Team work |
| Media employed | Classical teaching tools with white board and power point presentation |
| Reading list | 1.Prosea, 2000. Medicinal and Poisinous Plant 1. 2.Prosea, 2002. Medicinal and Poisinous Plant 2. 3.Sudiatso, S. 2000. Pharmacognosy. Jurusan Budi Daya Pertanian, IPB. |

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| | <p>4.Kurniawati, A. 2003. Teknik Budidaya Temu-Temuan. Modul Pelatihan.</p> <p>5.Prosea, 1999. Essential-oil Plants.</p> <p>6.Hornok, L. 1992. Cultivation and Processing Medicinal Plant. John Wiley and Sons.</p> <p>7.Wachjar, A. 1999. Budidaya Tanaman Penyegar. Diktat Kuliah</p> |
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AGH498 Seminar

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| Module Name | Seminar |
| Module level | Final Project Course |
| Code | AGH498 |
| Subtitle | - |
| Courses | AGH498 Seminar |
| Semester(s) in which the module is taught | 8th Semester |
| Person responsible | Dr Ir Ni Made Armini Wiendi, MS (NMA) |
| Lecturer | NMA, JGK, |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of teaching, contact hours | Final project presentation and discussion |
| Workload | Final project presentation 45 minutes Attendance 25 times |
| Credit points | 1 SCH = 1.3 ECTS |
| Requirement according to the examination regulation | 1. Registered in this course |
| Recommended prerequisites | - |
| Module objectives/intended learning outcome | Students are able to arrange and submit the results of their final assignment studies in scientific forums |
| Content | - |
| Study and examination requirement and forms of examination | Assessment includes: the ability to deliver seminar papers, the ability to answer and the accuracy of answers, language and attitude, paper format, timeliness |
| Media employed | Power point presentation |
| Reading list | Panduan Penyelesaian Tugas Akhir (Guide book for Final Project) |

AGH499 Final Project

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| Module Name | Final Project |
| Module level | Final Project Course |
| Code | AGH499 |
| Subtitle | - |
| Courses | AGH499 Final Project |
| Semester(s) in which the module is taught | 8th Semester |
| Person responsible | Prof. Dr. Ir Sandra Azis, MS (SAA) |
| Final Project Team | SAA, AWA, KSU, DDI |
| Language | Indonesian |
| Relation to curriculum | Compulsory Courses for undergraduate program in Agronomy and Horticulture |
| Type of final project | Research or Internship |
| Workload | 4 months |
| Credit points | 6 SCH = 7.6 ECTS |
| Requirement according to the examination regulation | Have passed all other courses aside AGH 498 and AGH499 |
| Recommended prerequisites | 1. Registered in this course 2. $GPA \geq 2.00$ 3. Pass STK 222 with grade minimum D 4. Pass AGH 398 with grade minimum C |
| Module objectives/intended learning outcome | Students able to compile a scientific description of the results of the study in the form of a bachelor thesis or final project report |
| Content | - |
| Study and examination requirement and forms of examination | Assessment includes: the ability to deliver seminar papers, the ability to answer and the accuracy of answers, language and attitude, paper format, timeliness |
| Media employed | |
| Reading list | Panduan Penyelesaian Tugas Akhir (Guide book for Final Project) |