MAGISTER PROGRAM
AGRICULTURE INDUSTRIAL TECHNOLOGY

MODULE HANDBOOK

2022

UNIVERSITAS PADJADJARAN
JATINANGOR

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **N20B2038**

Course Content	Advanced carbohydrate base process technology
Semester	1
Lecturer	1. Dr. Fitry Filianty S.TP., M.Si 2. Dr. Edy Subroto S.TP., M.P
Language	Indonesia
Course group	Process Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks= 26.67 hours Training: 2 x 60' x 16 weeks= 32 hours Individual Study: 2 x 60' x 16 weeks= 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to master the fundamentals of process technology as a basis for creating quality carbohydrate-based products
	Students are able to analyze and evaluate the quality of carbohydrate-based products scientifically
	Students are able to design carbohydrate-based products that are of good quality and meet consumer preferences
Study Material: Learning Materials	1. Physical, chemical and functional characteristics of carbohydrates 2. Analysis of physical, chemical and functional properties of carbohydrates 3. Carbohydrate isolation techniques 4. Carbohydrate structure modification 5. Carbohydrate hydrocolloids 6. Carbohydrate-based bioplastics 7. Assessment 1 8. Sugar production technology 9. Starch production technology 10. Cellulose technology 11. Industrial enzymes for carbohydrate processing 12. Nanotechnology in industrial applications of carbohydrate derivatives 13. Sources and potential of raw material commodities for carbohydrate industry 14. Assessment 2
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment Paper Rubric:

	Excellent/A (80-100): The anatomy of the paper is in accordance with the predetermined format, written with correct language rules, with an easy-to-read layout, consistent in the presentation of figures, graphs, and tables, free of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written with correct language rules, easy to read layout, consistent in the presentation of figures, graphs, and tables, and free of elements. plagiarism. Good/C (60-68): Anatomy of the paper is in accordance with the format, written with good language rules, poor layout, consistent in presenting figures, graphs, and tables, and free of plagiarism. Fair/D (50-59): Anatomy of the paper according to the predetermined format, written with correct language rules, with poor layout, inconsistent presentation of figures, graphs, and tables, but free from plagiarism. Poor/E (<50): Fails to meet requirements"
Study and examinations requirements	
References	*1. Whistler, Roy L. 1965. Methods in Carbohydrate Chemistry: General Polysaccharides. Academic Press* *El Khadem, Hassan S. 1988. Carbohydrate Chemistry: Monosaccharides and their Oligomers. Academic Press*

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **N20B2039**

Course Content	Advanced fat/oil base process technology
Semester	1
Lecturer	1. Dr. Aldila Din Pangawikan S.TP., M.Sc 2. Dr. Edy Subroto S.TP., M.P
Language	Indonesia
Course group	Process Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks= 26.67 hours Training: 2 x 60' x 16 weeks= 32 hours Individual Study: 2 x 60' x 16 weeks= 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to master the fundamentals of process technology as a basis for creating quality products based on fats / oils
	Students are able to analyze and evaluate the quality of fat / oil-based products scientifically
	Students are able to design quality fat/oil-based products that meet consumer preferences
Study Material: Learning Materials	1. Introduction & engineering concepts 2. Fat structure & chemical properties 3. Principles of fat alteration & characterization 4. Fat-2 products & derivatives 5. Fat extraction & purification techniques 6. Fat derivatization & fraction-2 oleochemicals 7. Individual assignment-1 (Fat engineering) 8. Hydrogenation & esterification 9. Surfactants & shampoos 10. Derivatization of food oleochemicals

	11. Margarine & similar 12. Biodiesel & its manufacturing process 13. Dietary fat substitution 14. Individual assignment-2 (Oleochemical engineering)
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment Paper Rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the predetermined format, written with correct language rules, with an easy-to-read layout, consistent in the presentation of figures, graphs, and tables, free of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written with correct language rules, easy to read layout, consistent in the presentation of figures, graphs, and tables, and free of elements. plagiarism. Good/C (60-68): Anatomy of the paper is in accordance with the format, written with good language rules, poor layout, consistent in presenting figures, graphs, and tables, and free of plagiarism. Fair/D (50-59): Anatomy of the paper according to the predetermined format, written with correct language rules, with poor layout, inconsistent presentation of figures, graphs, and tables, but free from plagiarism. Poor/E (<50): Fails to meet requirements"
Study and examinations requirements	
References	*1.Chakrabarty, M. M. (2003). Chemistry and technology of oils & fats (Vol. 1).* *Hernandez, E. M., & Kamal-Eldin, A. (2013). Processing and nutrition of fats and oils. John Wiley & Sons* *3. Shahidi, F. (Ed.). (2005). Bailey's Industrial Oil and Fat Products, Edible Oil and Fat Products: Processing Technologies (Vol. 5). John Wiley & Sons.*

	PADJADJARAN UNIVERSITY FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM	COURSE CODE: N20B2040

Course Content	Advanced protein base process technology
Semester	1
Lecturer	1. Putri Widyanti Harlina, S.Pt., M.Si., M.Eng., Ph.D. 2. Dr. Edy Subroto S.TP., M.P
Language	Indonesia
Course group	Process Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks= 26.67 hours Training: 2 x 60' x 16 weeks= 32 hours Individual Study: 2 x 60' x 16 weeks= 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to master the fundamentals of process technology as a basis for creating quality protein-based products
	Students are able to analyze and evaluate the quality of protein-based products scientifically
	Students are able to design quality protein-based products that meet consumer preferences
Study Material: Learning Materials	1. Structure, composition and characteristics of proteins 2. Plant-base protein 3. Animal-base protein 4. Protein extraction techniques 5. Protein purification techniques 6. Principles of protein molecular character changes during processing 7. Assessment 1 8. Principle of protein derivatization reaction to amino acids 9. Protein transformation techniques 10. Application of protein in processing technology for the

	purposes of various industries 11. Exploration of protein and amino acid sources 12. Protein-based product innovation 1 13. Protein-based product innovation 2 14. Assessment 2
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment Paper Rubric: Excellent /A (80-100): The anatomy of the paper is in accordance with the predetermined format, written with correct language rules, with an easy-to-read layout, consistent in the presentation of figures, graphs, and tables, free of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written with correct language rules, easy to read layout, consistent in the presentation of figures, graphs, and tables, and free of elements. plagiarism. Good/C (60-68): Anatomy of the paper is in accordance with the format, written with good language rules, poor layout, consistent in presenting figures, graphs, and tables, and free of plagiarism. Fair/D (50-59): Anatomy of the paper according to the predetermined format, written with correct language rules, with poor layout, inconsistent presentation of figures, graphs, and tables, but free from plagiarism. Poor/E (<50): Fails to meet requirements"
Study and examinations requirements	
References	*1.D. Whitford. 2005. Proteins; Structure and Fand unction. John Wiley and Son. New York* *2. E. Suprayitno and T.D. Sulistiyati. 2017. Protein Metabolism. Brawijaya University Press. Malang* *3. M. A. Alterman and P. Hunziker. 2011. Amino Acid Analysis: Methods and Protocol. Springer* *4. M.P. Deutscher. 1990. Methods in Enzymology Vol 182; Guide to Protein Purification. Academic Press. San Diego. California. USA*

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Course Content	Quality System Engineering
Semester	1
Lecturer	1. Dr. Dwi Purnomo STP., M.T 2. Dr. Mahani SP., M.Si,
Language	Indonesia
Course group	Management Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks= 26.67 hours Training: 2 x 60' x 16 weeks= 32 hours Individual Study: 2 x 60' x 16 weeks= 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to apply the Design Thinking framework in their efforts to develop Agro-industry products that Problem-Fit
	Students are able to design quality from the customer's point of view, ensure a contextualized customer problem statement based on the concept of "The Jobs To Be Done" and validate it in the intended market.
	Students are able to understand the quality engineering process with the Agile Design Thinking- Scrum framework and express it in a work plan.
Study Material: Learning Materials	1. Introduction to Quality Management and Systems 2. Quality Infrastructure 3. Food Traceability and Food Integrity 4. Quality and Quality Attributes 5. Integrated Quality Management System 1 6. Traceability: Techniques and Technologies 1 Traceability: Techniques and Technologies 2 8. KAIZEN 9. ISO 22000 10. ISO 14000

	11. Six Sigma 12. Quality Standards for Agroindustrial Products in International and National Trade 13. Quality Policy and Strategy 14. Implementation of Quality System to Products 1
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment Paper Rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the predetermined format, written with correct language rules, with an easy-to-read layout, consistent in the presentation of figures, graphs, and tables, free of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written with correct language rules, easy to read layout, consistent in the presentation of figures, graphs, and tables, and free of elements. plagiarism. Good/C (60-68): Anatomy of the paper is in accordance with the format, written with good language rules, poor layout, consistent in presenting figures, graphs, and tables, and free of plagiarism. Fair/D (50-59): Anatomy of the paper according to the predetermined format, written with correct language rules, with poor layout, inconsistent presentation of figures, graphs, and tables, but free from plagiarism. Poor/E (<50): Fails to meet requirements"
Study and examinations requirements	
References	*1, Race, J.B. et.al., 2014. System Management: Planning, Enterprise Identity, and Deployment, Second Edition (Systems Engineering) 2, nd Edition, CRC Press.* *2. Saizarbitoria, H. I., 2010. Ebook ISO 9001, ISO 14001 and New Management Standard. Springer*

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **N20A1008**

Course Content	Agroindustry Business Creation and Development
Semester	1
Lecturer	1. Dr. Mahani SP., M.Si, 2. Dr. Dwi Purnomo STP., M.T .
Language	Indonesia
Course group	Management Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks= 26.67 hours Training: 2 x 60' x 16 weeks= 32 hours Individual Study: 2 x 60' x 16 weeks= 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to map market opportunities and trends and then carry out a holistic planning process.
	Students understand the processes of systems thinking in their efforts to develop agro-industrial businesses that are impactful and sustainable.
	Students are able to map the potential of commodities developed in Indonesia, and make business planning and development by considering short-term interests and long-term goals.
Study Material: Learning Materials	1. Components and enablers of entrepreneurial creation 2. Identification and acquisition of financial resources 3. Identification and acquisition of human resources 4. Development of entrepreneurial strategy 5. Effective business planning 6. Creative Industry opportunities and challenges for the agro sector
Assessment Rubric	Examination Form: Presentation and Written Paper

	Assignment Paper Rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the predetermined format, written with correct language rules, with an easy-to-read layout, consistent in the presentation of figures, graphs, and tables, free of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written with correct language rules, easy to read layout, consistent in the presentation of figures, graphs, and tables, and free of elements. plagiarism. Good/C (60-68): Anatomy of the paper is in accordance with the format, written with good language rules, poor layout, consistent in presenting figures, graphs, and tables, and free of plagiarism. Fair/D (50-59): Anatomy of the paper according to the predetermined format, written with correct language rules, with poor layout, inconsistent presentation of figures, graphs, and tables, but free from plagiarism. Poor/E (<50): Fails to meet requirements"
Study and examinations requirements	
References	*1. Richardson, C. J. (2019). The business of agriculture. Kendall Hunt Publishing.* *2. Kimball, C., & The Staff of Entrepreneur Media. (2016). Start your own agribusiness: Your step-by-step guide to success. Entrepreneur Press.* *3. Rankin, W. A. (2019). Supply chain management for sustainable agriculture. Springer.* *4. Schneider, S. A. (2016). Food, farming, and sustainability: Readings in agricultural law (2nd ed.). Carolina Academic Press*

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Course Content	Research Commercialization Project 1
Semester	1
Lecturer	1. Dr. Dwi Purnomo STP., M.T 2. Dr. Fitry Filianty S.TP., M.Si
Language	
Course group	Research Project
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks= 26.67 hours Training: 2 x 60' x 16 weeks= 32 hours Individual Study: 2 x 60' x 16 weeks= 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to create and present Minimum Viable Product I in the form of a set of products developed with enough features to satisfy early users and receive early feedback.
	Students are able to express planning and write a research project implementation plan with the Agile Scrum framework to have a research plan that is oriented towards realizing Innovation Driven Enterprises.
	Students are able to understand the research process with a systematic and holistic way of thinking with the Reseach Onion approach and produce a good research process.
Study Material: Learning Materials	1. Research Plan 2. Problem Formulation and Research Objectives 3. Literature Review 4. Conceptual Framework 5. Research Method I 6. Research Method II 7. Research Result Data 8. Research Discussion I

	9. Research Discussion II 10. Data Interpretation 11. Research Novelty 12. Research Conclusion 13. Bibliography 14. Thesis Writing
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment Paper Rubric: Very Good/A (80-100): The anatomy of the paper is in accordance with the predetermined format, written with correct language rules, with an easy-to-read layout, consistent in the presentation of figures, graphs, and tables, free of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written with correct language rules, easy to read layout, consistent in the presentation of figures, graphs, and tables, and free of elements. plagiarism. Good/C (60-68): Anatomy of the paper is in accordance with the format, written with good language rules, poor layout, consistent in presenting figures, graphs, and tables, and free of plagiarism. Fair/D (50-59): Anatomy of the paper according to the predetermined format, written with correct language rules, with poor layout, inconsistent presentation of figures, graphs, and tables, but free from plagiarism. Poor/E (<50): Fails to meet requirements"
Study and examinations requirements	
References	*1. Auerswald, P. E., & Branscomb, L. M. (2003). Taking technical risks: How innovators, executives, and investors manage high-tech risks. MIT Press.* *2. O'Shea, R. P., Allen, T. J., Chevalier, A., & Roche, F. (2005). Entrepreneurial orientation, technology transfer and spinoff performance of U.S. universities. Research Policy, 34(7), 994-1009.* *3. Markman, G. D., Phan, P. H., Balkin, D. B., & Gianiodis, P. T. (2005). Entrepreneurship and university-based technology transfer. Journal of Business Venturing, 20(2), 241-263.*

	PADJADJARAN UNIVERSITY FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM	COURSE CODE: N20B2041

Course Content	Nutraceutical Product Process Technology
Semester	2
Lecturer	1. Dr. Rossi Indiarto, S.TP., M.P., 2. Dr. Mahani SP., M.Si,
Language	Indonesia
Course group	Process Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks= 26.67 hours Training: 2 x 60' x 16 weeks= 32 hours Individual Study: 2 x 60' x 16 weeks= 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to master the fundamentals of metabolite compound extraction technology as a basis for creating quality products
	Students are able to analyze and evaluate the quality of ectak products of metabolite compounds scientifically.
	Students are able to design metabolite compound extract products into agro-industrial products that can meet consumer preferences
Study Material: Learning Materials	1. Definition of primary and secondary metabolites 2. Secondary metabolite pathways 3. Classification of secondary metabolites 4. Current commercial secondary metabolite products 5. Development of secondary metabolite products 6. Process engineering of obtaining secondary metabolite products 7. Individual assignment-1 (Process engineering) 8. Characteristics of secondary metabolite materials and products

	9. Extraction techniques of secondary metabolite candidates and products 10. Separation and purification of secondary metabolite components 11. Modern machinery and equipment for obtaining secondary metabolites 12. Product development of secondary metabolites 13. Downstreaming of secondary metabolite products 14. Individual assignment-2 (downstream techniques)
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment Paper Rubric: Very Good/A (80-100): The anatomy of the paper is in accordance with the predetermined format, written with correct language rules, with an easy-to-read layout, consistent in the presentation of figures, graphs, and tables, free of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written with correct language rules, easy to read layout, consistent in the presentation of figures, graphs, and tables, and free of elements. plagiarism. Good/C (60-68): Anatomy of the paper is in accordance with the format, written with good language rules, poor layout, consistent in presenting figures, graphs, and tables, and free of plagiarism. Fair/D (50-59): Anatomy of the paper according to the predetermined format, written with correct language rules, with poor layout, inconsistent presentation of figures, graphs, and tables, but free from plagiarism. Poor/E (<50): Fails to meet requirements"
Study and examinations requirements	
References	*1. Wildman, R. E. C. (Ed.). (2016). Handbook of nutraceuticals and functional foods (2nd ed.). CRC Press.* *2. Pathak, Y. V. (Ed.). (2010). Handbook of nutraceuticals: Volume I: Ingredients, formulations, and applications. CRC Press.* *3. Pathak, Y. V. (Ed.). (2011). Handbook of nutraceuticals: Volume II: Scale-up, processing, and automation. CRC Press.* *4. Zhang, H., & Xu, S. Y. (2007). The extraction of nutraceuticals and bioactive compounds from food wastes and*

	by-products. *McClements, D. J. (2015). Nanoparticle- and microparticle-based delivery systems: Encapsulation, protection and release of active compounds. CRC Press.* *6. Anandharamakrishnan, C. (Ed.). (2014). Techniques for nanoencapsulation of food ingredients. Springer.*

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **N20B2044**

Course Content	Biotechnology Industry
Semester	2
Lecturer	1. Tri Yuliana S.Si., M.Si., Ph.D 2. Putri Widyanti Harlina, S.Pt., M.Si., M.Eng., Ph.D.
Language	Indonesia
Course group	Process Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks= 26.67 hours Training: 2 x 60' x 16 weeks= 32 hours Individual Study: 2 x 60' x 16 weeks= 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to master the fundamentals of process biotechnology processes as a basis for the creation of quality products
	Students are able to analyze and evaluate the quality of biotechnology products scientifically
	Students are able to design quality biotechnology products that meet consumer preferences
Study Material: Learning Materials	1. Introduction (Introduction to Agroindustrial Biotechnology) 2. (Agro)-Industrial Biotechnology (Tools and Applications) 3. Biocatalysts (enzymes) in Industry 4. Genetic Engineering 5. Upstream and Downstream Processing I (theory) 6. Upstream and Downstream Processing II (case study) 7. Nanobiotechnology 8. Chemical and pharmaceutical industry biotechnology 9. Food and feed industry biotechnology 10. Enzyme Biotechnology 11. Environmental Biotechnology

	12. Energy Biotechnology 13. Case study 1 14. Case study 2
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment Paper Rubric: Very Good/A (80-100): The anatomy of the paper is in accordance with the predetermined format, written with correct language rules, with an easy-to-read layout, consistent in the presentation of figures, graphs, and tables, free of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written with correct language rules, easy to read layout, consistent in the presentation of figures, graphs, and tables, and free of elements. plagiarism. Good/C (60-68): Anatomy of the paper is in accordance with the format, written with good language rules, poor layout, consistent in presenting figures, graphs, and tables, and free of plagiarism. Fair/D (50-59): Anatomy of the paper according to the predetermined format, written with correct language rules, with poor layout, inconsistent presentation of figures, graphs, and tables, but free from plagiarism. Poor/E (<50): Fails to meet requirements
Study and examinations requirements	
References	*1.Higgins, I.J., D.J. Best & J. Jones. 1985. Biotechnology Principles and Applications. Oxford London Edinburgh. Boston Palo Alto Melbourne* *2. Scott D. & Tilak V. & James A. 2015. Handbook of industrial chemistry and biotechnology. Springer.* *3. Soetaert, W and Vandamme, E.J. 2010. Industrial Biotechnology. Wiley-vch. Weinheim.*

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Course Content	Nanotechnology-based downstream process engineering
Semester	2
Lecturer	1. Dr. Fitry Filianty S.TP., M.Si 2. Dr. Rossi Indiarto, S.TP., M.P.,
Language	Indonesia
Course group	Process Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks= 26.67 hours Training: 2 x 60' x 16 weeks= 32 hours Individual Study: 2 x 60' x 16 weeks= 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to master the fundamentals of nano technology to produce quality products
	Students are able to analyze and evaluate nanotechnology products scientifically.
	Students are able to design products with nano technology into quality agro-industrial products and meet consumer preferences
Study Material: Learning Materials	1. Concept of nano science and nano technology and development of nano industry, 2. Characterization techniques of nano products 3. Physical nano material synthesis techniques 4. Chemical nano material synthesis techniques 5. Exploration and application of nanotechnology in the agrondustrial field 6. Exploration and application of nanotechnology in healthcare 7. Exploration and application of nanotechnology in biotechnology 7. 8. Exploration and application of nanotechnology in the field of cosmetics

	9. Exploration and application of nanotechnology in pharmaceutical field 10. Exploration and application of nanotechnology in the environmental field
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment Paper Rubric: Very Good/A (80-100): The anatomy of the paper is in accordance with the predetermined format, written with correct language rules, with an easy-to-read layout, consistent in the presentation of figures, graphs, and tables, free of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written with correct language rules, easy to read layout, consistent in the presentation of figures, graphs, and tables, and free of elements. plagiarism. Good/C (60-68): Anatomy of the paper is in accordance with the format, written with good language rules, poor layout, consistent in presenting figures, graphs, and tables, and free of plagiarism. Fair/D (50-59): Anatomy of the paper according to the predetermined format, written with correct language rules, with poor layout, inconsistent presentation of figures, graphs, and tables, but free from plagiarism. Poor/E (<50): Fails to meet requirements"
Study and examinations requirements	
References	*1. Bhushan, B. (Ed.). (2017). Springer handbook of nanotechnology (4th ed.). Springer.* *2. Fathi, M., & Mozafari, M. R. (Eds.). (2019). Nanoencapsulation technologies for the food and nutraceutical industries. Academic Press.* *3. Patel, R. (Ed.). (2012). Nanoparticle technology for drug delivery. Informa Healthcare.* *4. Rai, M., & Duran, N. (Eds.). (2017). Metal nanoparticles in microbiology. Springer.* *5. McClements, D. J. (2016). Nanoemulsions: Formulation, applications, and characterization. Springer.* *6. Niessner, R. (Ed.). (2016). Analytical chemistry of nanomaterials: Principles and applications. Wiley-VCH.*

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **UNX999**

Course Content	Supply Chain Management
Semester	2
Lecturer	1. Prof. Dr. Ir. H. Roni KastamanMSIE 2.Dr. Boy Macklin Pareira Prawiranegara S.T., M.Si
Language	Indonesia
Course group	Management Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks = 26.67 hours Exercise: 2 x 60' x 16 weeks = 32 hours Individual study: 2 x 60' x 16 weeks = 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to analyze a company's supply chain, supply chain performance, and green supply chain.
	Students are able to plan collaboration systems, supply and demand, distribution strategies, purchasing strategies, and transportation systems.
	Students are able to determine suppliers, prices and income in the supply chain
Study Material: Learning Materials	1. Introduction to Supply Chain Management 1 2. Introduction to Supply Chain Management 2 3. Collaboration in sustainable supply chain management 4. Supply and demand planning in supply chain 1 5. Supply and demand planning in supply chains 2 6. Distribution management 7. Purchasing strategy 8. Supplier selection in the supply chain 9. Pricing and revenue in the supply chain 9. 10. Transportation in the supply chain 11. Supply chain performance measurement 1

	12. Supply chain performance measurement 2 13. Green supply chain 1 14. Green supply chain 2
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements
Study and examinations requirements	
References	*1. Crandall, Richard E., Crandall, Dick, Crandall, William & Chen, Charlie C (2015). Principles of supply chain management. 2nd ed., CRC Press, Boca Raton, Florida ; London, [England] ; New York.* *2. Indrajit, Richerdus Eko and Djokopranoto, Richerdus. 2002. Supply* *Chain* *Management Concept* *: A New Way of Looking at the Supply Chain. Jakarta: PT Gramedia Widiarsarana Indonesia.* *3. Simchi-Levi, D., Kaminsky, Philip, & Simchi-Levi, Edith. (2003). Designing and managing the supply chain: Concepts, strategies,*

	and case studies (2nd ed., Irwin/McGraw-Hill series in operations and decision sciences). Boston: McGraw-Hill/Irwin.

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Course Content	Business Model Engineering
Semester	2
Lecturer	1. Dr. Dwi Purnomo STP., M.T 2. Dr. Mahani SP., M.Si,
Language	Indonesia
Course group	Management Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks = 26.67 hours Exercise: 2 x 60' x 16 weeks = 32 hours Individual study: 2 x 60' x 16 weeks = 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to understand the basic concepts of business process engineering (RPB) and its relationship with business strategy and apply the model of the generic business process.
	Students are able to apply business process modeling and improvement techniques and conduct process flow analysis both simple and complex.
	Students are able to apply process mining techniques for reinviting business processes and making process improvements with process mining software.
Study Material: Learning Materials	1. Introduction of Business Process Reengineering 2. Business strategy and Business Process 3. Generic business process models 4. Business process in ERP system 5. Process flow analysis 1 6. Process flow analysis 2 7. Assessment presentation 8. Business process modeling 1 9. Business process modeling 2

	10. Business process improvement 11. Guest lecturer 12. Re-inventing business process using process mining 1: model and discovery 13. Re-inventing business process using process mining 2: analyzing and evaluation 14. Case Study: Presentation
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements
Study and examinations requirements	
References	*1. Teece, D. J. (2018). Business models and dynamic capabilities. Oxford University Press.* *2. Wirtz, B. W., Pistoia, A., Ullrich, S., & Göttel, V. (2016). Business models: Origin, development and future research perspectives. Long Range Planning, 49(1), 36-54.* *3. Casadesus-Masanell, R., & Ricart, J. E. (2010). From strategy to business models and onto tactics. Long Range Planning, 43(2-3), 195-215.* *4. Choudary, S. P., Van Alstyne, M. W., & Parker, G. G.*

	(2016). Platform revolution: How networked markets are transforming the economy and how to make them work for you. W. W. Norton & Company. *5. Afuah, A. (2014). Business model innovation: Concepts, analysis, and cases. Routledge.* *6. Ries, E. (2011). The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses. Crown Business.*

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **N20B2050**

Course Content	Research Commercialization Project 2
Semester	2
Lecturer	1. Dr. Fitry Filianty S.TP., M.Si 2. Dr. Dwi Purnomo STP., M.T
Language	Indonesia
Course group	Research Project
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks = 26.67 hours Exercise: 2 x 60' x 16 weeks = 32 hours Individual study: 2 x 60' x 16 weeks = 32 hours
Course credits (SKS)	2 (SKS)
Prerequisite courses	Have completed the Research Commercialization Project 1 course.
Course Learning Outcomes (CPMK)	Students are able to create and present Minimum Viable Product II in the form of a series of products developed with enough features to satisfy early users and receive early feedback.
	Students get feedback and validation from the research planning process and write their improvement plan in the research project. The research process is carried out with the Agile Scrum framework to have a research plan that is oriented towards realizing Innovation Driven Enterprises.
	Students are able to understand the research process with a systematic and holistic way of thinking with the Reseach Onion approach and produce a good research process.
Study Material: Learning Materials	1. Research philosophy 2. Stages of research preparation (background and problem formulation, objectives, and scope) 3. Techniques and approaches for determining research methods

	4. Research implementation, analysis and interpretation of results 5. Techniques for presenting research results 6. Thesis research proposal submission
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements
Study and examinations requirements	
References	1. Martin, R. L. (2009). The design of business: Why design thinking is the next competitive advantage. Harvard Business Press. 2. Dorf, R. C., & Byers, T. H. (2019). Technology ventures: From idea to enterprise (5th ed.). McGraw-Hill Education. 3. Mootee, I. (2013). Design thinking for strategic innovation: What they can't teach you at business or design school. Wiley.

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **UNX800**

Course Content	Research Proposal Seminar
Semester	2
Lecturer	1. Dr. Fitry Filianty S.TP., M.Si
Language	Indonesia
Course group	Research Project
Learning method	
Workload	Total workload: 45.3 hours (2720 minutes) **Class** Lecture: 1 x 50' x 16 weeks = 13.3 hours Exercise: 1 x 60' x 16 weeks = 16 hours Individual study: 1 x 60' x 16 weeks = 16 hours
Course credits (SKS)	1 (SKS)
Prerequisite courses	Have completed the course
Course Learning Outcomes (CPMK)	Able to write a good thesis proposal in terms of language and typography
	Able to plan and develop research methods according to plan
	Able to master the latest knowledge on research topics and write in proposals
Study Material: Learning Materials	1. Research Plan based on background 2. Problem Formulation and Research Objectives 3. Literature Review 4. Conceptual Framework 5. Research Method I 6. Research Method II 7. Research Result Data 8. Research Discussion I 9. Research Discussion II 10. Data Interpretation 11. Research Novelty 12. Research Conclusion 13. Bibliography 14. Thesis Writing

Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements
Study and examinations requirements	
References	

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **N20B2042**

Course Content	Storage technology of agro-industrial materials and products
Semester	3
Lecturer	1. Dr. Herlina Marta, S.TP., M.Si. 2. Dr. Aldila Din Pangawikan S.TP., M.Sc.
Language	Indonesia
Course group	Process Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks = 26.67 hours Exercise: 2 x 60' x 16 weeks = 32 hours Individual study: 2 x 60' x 16 weeks = 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to master the fundamentals of storage technology for agricultural raw materials and agro-industrial products that maintain their quality.
	Students are able to analyze and evaluate the types and methods of storage that are appropriate for raw materials and agro-industrial products.
	Students are able to design storage techniques for raw materials and agro-industrial products that can maintain their quality optimally.
Study Material: Learning Materials	1. Definition and factors affecting product quality 2. Quality deterioration kinetics model 3. Calculation of shelf life 4. Development of storage and packaging process engineering 5. Planning, implementation and control of flow and storage of agro-industrial materials and products (discussion of case studies and field trips)
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper

	rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements
Study and examinations requirements	
References	*1. Fellows, P. J. (2009). Food processing technology: Principles and practice (3rd ed.). Woodhead Publishing.* *2. Hodges, R. J., & Farrell, G. (2004). Crop post-harvest: Science and technology, Volume 2: Durables storage, processing, and pest management. Wiley-Blackwell.* *3. Prakash, V. (Ed.). (2011). Postharvest technology and food process engineering. Studium Press.* *4. Robertson, G. L. (2012). Food packaging: Principles and practice (3rd ed.). CRC Press.* *5. Batt, C. A., & Tortorello, M. L. (Eds.). (2014). Encyclopedia of food microbiology (2nd ed.). Academic Press.* *6. Jongen, W. (Ed.). (2005). Improving the safety of fresh fruit and vegetables. Woodhead Publishing.* *7. Florkowski, W. J., Shewfelt, R. L., Brueckner, B., & Prussia, S. E. (Eds.). (2014). Postharvest handling: A systems approach (3rd ed.). Academic Press.*

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **N20B2043**

Course Content	Agro-industrial product packaging technology and innovation
Semester	3
Lecturer	1. Prof. Dr. Ir. Mohamad Djali, MS. 2. Dr. Souvia Rahimah S.TP., M.Sc M.Eng., Ph.D.,
Language	Indonesia
Course group	Process Course
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks = 26.67 hours Exercise: 2 x 60' x 16 weeks = 32 hours Individual study: 2 x 60' x 16 weeks = 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to master the fundamentals of packaging technology for agro-industrial products that are able to maintain product quality
	Students are able to analyze and evaluate the types and methods of good agro-industrial product packaging.
	Students are able to design packaging innovations that are able to maintain product quality while meeting consumer preferences
Study Material: Learning Materials	1. Definition and basic concepts of packaging, types of packaging materials, functions of packaging, 2. Packaging techniques, product interaction with packaging, 3. The concept of shelf life and its calculation, 4. Aseptic packaging technique, 5. Modified atmosphere packaging, 6. Active packaging types and techniques, 7. Edible coating, 8. Biodegradable packaging, 9. Smart and intelligent packaging,

	10. Application of packaging in the agricultural industry
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements
Study and examinations requirements	
References	*1. Paine, F. A., & Paine, H. Y. (2012). A handbook of food packaging (2nd ed.). Springer.* *2. Han, J. H. (Ed.). (2014). Innovations in food packaging (2nd ed.). Academic Press.* *3. Marsh, K., & Bugusu, B. (2007). Food packaging-roles, materials, and environmental issues. Journal of Food Science, 72(3), R39-R55.* *4. Yam, K. L., & Lee, D. S. (Eds.). (2012). Emerging food packaging technologies: Principles and practice. Woodhead Publishing.* *5. Emblem, A., & Emblem, H. (Eds.). (2012). Packaging technology: Fundamentals, materials, and processes. Woodhead Publishing.*

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:**

Course Content	Agro-industrial Technoeconomics
Semester	3
Lecturer	1. Prof. Dr. Ir. H. Roni Kastaman,MSIE 2. Dr. rer. nat. Fetriyuna, S.TP., M.Si.
Language	Indonesia
Course group	Management Courses
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks = 26.67 hours Exercise: 2 x 60' x 16 weeks = 32 hours Individual study: 2 x 60' x 16 weeks = 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Able to analyze the basic concepts and applications of technoeconomics in the field of agro-industry.
	Able to evaluate the feasibility of an agro-industrial enterprise or business
	Able to make an integrated agroindustry business plan
Study Material: Learning Materials	1. Introduction to Agro-Industrial Techno-Economics 2. Optimization of Bioenergy and Green Agro Industry (Webinar) 3. Techno-economic stages and analysis 4. Basic concept and application of Life Cycle Assessment (LCA) 5. 5. Basic concepts and application of Sensitivity Analysis 6. The role of TEA in the National Industrial Development Master Plan 7. Application of TEA (Case Study Research in Various Agro Industries 8. Technoeconomic Concept 9. Cost Concept

	10. Investment 11. Feasibility study and review of engineering economics 12. Public project and cost effectiveness 13. Value engineering 14. Agro-industry business plan
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements
Study and examinations requirements	
References	*1. Fracasso, M., Moro, D., & Pellegrino, G. (2018). Economic efficiency in agriculture: The theory of share tenancy. Routledge.* *2. Djanibekov, N., Finger, R., & Djanibekov, U. (2019). Technoeconomic and environmental evaluation of organic farming in Uzbekistan. Springer.* *3. Tauer, L. W. (2012). Modern production economics: Theory and applications (2nd ed.). Springer.* *4. Duflo, E., Kremer, M., & Robinson, J. (2011). Nudging farmers to use fertilizer: Theory and experimental evidence from Kenya. American Economic Review, 101(6), 2350-2390.*

	5. Swinton, S. M., Lupi, F., Robertson, G. P., & Hamilton, S. K. (2007). Ecosystem services and agriculture: Cultivating agricultural ecosystems for diverse benefits. Ecological Economics, 64(2), 245-252.

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **N20B2047**

Course Content	Creative Approach to Agro Industry
Semester	3
Lecturer	1. Dr. Dwi Purnomo STP., M.T. 2. Dr. Gemilang Lara Utama, S.Pt., MIL.
Language	Indonesia
Course group	Management Courses
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks = 26.67 hours Exercise: 2 x 60' x 16 weeks = 32 hours Individual study: 2 x 60' x 16 weeks = 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to analyze the needs of the agro industry to survive and develop
	Students are able to evaluate improvements with a creative approach to the production process and agro-industry management
	Students are able to design agro-industry with a creative approach that suits the dynamics of society
Study Material: Learning Materials	1. The agro-industrial creative sector and its role in improving the economy 2. Creative economy ecosystem 3. Creative agro-industry business incubation 4. Value chain 5. Supply chain 6. Concepts and applications of agro-industrial production process engineering techniques 7. Concepts and applications of agro-industrial management engineering techniques

	8. Structured Analysis and Design tools (SADT) technique 9. Integrated Definition technique (IDEFx)
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements
Study and examinations requirements	
References	*1. Smit, J., & Ratta, A. (2012). The urban agrarian: A handbook for agropreneurs, urban homesteaders, and cooking aficionados. Chelsea Green Publishing.* *2. Salam, M. A., & Prakash, J. (Eds.). (2018). Harnessing the power of creativity and innovation in agriculture: Regional perspectives. Springer.* *3. Barrios, E., & Cordonnier, T. (Eds.). (2017). Sustainable agriculture reviews 29: Agroecology and global change. Springer.* *4. Yorulmaz, H. (Ed.). (2019). Technological innovation in agriculture and rural development. IGI Global.* *5. Leitão, J., & Baptista, R. (Eds.). (2017). Agricultural entrepreneurship and innovation: New horizons in rural business development. Springer.*

	PADJADJARAN UNIVERSITY FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM	COURSE CODE: N20A1012

Course Content	Value Engineering
Semester	3
Lecturer	1. Prof. Dr. Ir. H. Roni Kastaman MSIE, 2. Dr. Dwi Purnomo STP., M.T.
Language	Indonesia
Course group	Management Courses
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks = 26.67 hours Exercise: 2 x 60' x 16 weeks = 32 hours Individual study: 2 x 60' x 16 weeks = 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to create Minimum Viable Product III in the form of a series of products developed with enough features to satisfy early users and receive early feedback.
	Students plan and write a research project implementation plan for the third cycle, fixing the findings from the customer and the market. The improvement in this cycle is done with the Agile Scrum framework until it has a research plan that is oriented in realizing Innovation Driven Enterprises.
	Students are able to understand the research process with a systematic and holistic way of thinking with the Reseach Onion approach and produce a good research process.
Study Material: Learning Materials	1. Development history and basic concepts of value engineering 2. Organization and implementation of value engineering 3. Concepts of value, cost, and function 4. Value engineering techniques and work plans in the information phase: breakdown analyses, cost models, function analyses

	5. Value engineering techniques and work plans in the speculation phase 6. Value engineering techniques and work plans in the analysis phase 7. Value engineering techniques and work plans in the development phase 8. Value engineering techniques and work plans in the recommendation phase 9. Value engineering techniques and work plans in the implementation phase
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements
Study and examinations requirements	
References	*1 Miles, L. D. (2015). Techniques of value analysis and engineering. CreateSpace Individual Publishing Platform.* *2 Kelly, J., Male, S., & Graham, D. (2014). Value management of construction projects (2nd ed.). Wiley-Blackwell.* *3. Bytheway, C. W. (2007). FAST creativity and innovation: Rapidly improving processes, product development and solving*

	complex problems. J. Ross Publishing. *4. Cooper, R. G., & Edgett, S. J. (2008). Maximizing productivity in product innovation. Product Development Institute.*

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:**

Course Content	Research Commercialization Project 3
Semester	3
Lecturer	1. Dr. Fitry Filianty S.TP., M.Si 2. Dr. Dwi Purnomo S.TP., M.T.
Language	Indonesia
Course group	Research Project
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks = 26.67 hours Exercise: 2 x 60' x 16 weeks = 32 hours Individual study: 2 x 60' x 16 weeks = 32 hours
Course credits (SKS)	2 (SKS)
Prerequisite courses	Have completed the Research Commercialization Project 2 course
Course Learning Outcomes (CPMK)	Students are able to create and present Minimum Viable Product II in the form of a series of products developed with enough features to satisfy early users and receive early feedback.
	Students get feedback and validation from the research planning process and write their improvement plan in the research project. The research process is carried out with the Agile Scrum framework to have a research plan that is oriented towards realizing Innovation Driven Enterprises.
	Students are able to understand the research process with a systematic and holistic way of thinking with the Reseach Onion approach and produce a good research process.
Study Material: Learning Materials	1. Techniques for writing scientific papers 2. Techniques for discussing research results 3. Thesis writing guidance

Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements
Study and examinations requirements	
References	1. Thursby, M., & Thursby, J. (2007). University entrepreneurship and technology transfer: Process, design, and intellectual property. Elsevier. 2. Stickdorn, M., & Schneider, J. (2010). This is service design thinking: Basics, tools, cases. Wiley. 3. Johansson-Sköldberg, U., Woodilla, J., & Çetinkaya, M. (2013). Design thinking: Past, present and possible futures. Creativity and Innovation Management, 22(2), 121-146. 4. Leavy, B. (2010). Design thinking - a new mental model of value innovation. Strategy & Leadership, 38(3), 5-14.

	PADJADJARAN UNIVERSITY **FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY** **MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM**	**COURSE CODE:** **N20B2048**

Course Content	Innovation Management
Semester	4
Lecturer	1. Dr. Mahani SP., M.Si, 2. Dr. Dwi Purnomo S.TP., M.T.
Language	Indonesia
Course group	Management Courses
Learning method	
Workload	Total workload: 90.6 hours (5440 minutes) **Class** Lecture: 2 x 50' x 16 weeks = 26.67 hours Exercise: 2 x 60' x 16 weeks = 32 hours Individual study: 2 x 60' x 16 weeks = 32 hours
Course credits (SKS)	3
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to increase creativity and innovation and apply innovation management concepts from an entrepreneurial perspective.
	Students are able to contribute according to their fields and analyze the concepts of creativity and innovation
	Students are able to commercialize the concept of creativity and innovation and apply supporting technology
Study Material: Learning Materials	1. Creativity and innovation management 2. Creativity concept 3. the concept of innovation 4. Product and service innovation 5. Innovation of the present 6. Social innovation 7. Innovation process and knowledge management 8. Commercialization and technology transfer Green Innovation and Open Innovation

Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements"
Study and examinations requirements	
References	*1. Walter Isaacson, 2014. The Innovators: How a Group of Hackers, Geniuses and Geeks Created the Digital Revolution. https://www.goodreads.com/book/show/21856367-the-innovators.* *2. Yunus, M. 2015. Innovation and Creativity in Marketing. Publisher UIN Maliki Press*

	PADJADJARAN UNIVERSITY FACULTY OF AGRO-INDUSTRIAL TECHNOLOGY MASTER OF AGRICULTURE INDUSTRIAL TECHNOLOGY STUDY PROGRAM	COURSE CODE: UNX998

Course Content	Thesis
Semester	4
Lecturer	1. Dr. Fitry Filianty S.TP., M.Si.
Language	Indonesian
Course group	Research Project
Learning method	Lecturer Project-Based Learning Structure Assignment Self-Directed Learning Cooperative Learning
Workload	Total workload: 160 hours (9600 minutes) **Class** Individual study: 2 x 50' x 32 weeks = 53.3 hours Practice: 2 x 50' x 32 weeks = 53.3 hours Assignment: 2 x 50' x 32 weeks = 53.3 hours
Course credits (SKS)	6 (SKS)
Prerequisite courses	-
Course Learning Outcomes (CPMK)	Students are able to create Minimum Viable Product IV in the form of a set of products developed with enough features to satisfy early users and receive early feedback.
	Students plan and write a research project implementation plan for cycle IV, fixing the findings from customers and the market. The improvement in this cycle is done with the Agile Scrum framework until it has a research plan that is oriented in realizing Innovation Driven Enterprises.
	Students are able to present to investors and present validated data on their start-up business.
Study Material: Learning Materials	1. Creating an original thesis manuscript with the latest topics 2. Scientific theoretical foundations and the use of the latest literature related to research topics 3. Appropriate and relevant methods with research topics

	4. Discussions with supervisors regarding data processing, conclusions and recommendations 5. Presenting and defending the thesis in front of the board of examiners
Assessment Rubric	Examination Form: Presentation and Written Paper Assignment paper rubric: Excellent/A (80-100): The anatomy of the paper is in accordance with the established format, written with the right language rules, with an easy-to-read layout, consistent in the presentation of pictures, graphs and tables, and free from elements of plagiarism, and inspires readers. Very Good/B (69-79): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with an easy-to-read layout, consistent in the presentation of images, graphs and tables, and free from elements of plagiarism. Good/C (60-68): The anatomy of the paper is in accordance with the established format, written with proper language conventions, with a layout that is not good, consistent in presenting pictures, graphs and tables, and free from elements of plagiarism. Fair/D (50-59): The anatomy of the paper is in accordance with the established format, written in the correct language rules, with a layout that is not good, not yet consistent in the presentation of pictures, graphs and tables, but free from elements of plagiarism. Poor/E (<50): Failed to fulfill the requirements"
Study and examinations requirements	
References	