

STUDY PROGRAM INFORMATION

A.	Name of Study Program	:	Agrotechnology
	Level of Study	:	Bachelor's Degree
	Faculty	:	Agriculture and Animal Science
B.	Vision	:	<ol style="list-style-type: none"> 1. Environmental Stewardship (Healing the Earth): Deeply adapted from the Islamic concept of "<i>Human as Caliphates on Earth</i>," the program envisions a future where agriculture goes beyond production to actively restore, heal, and enhance the natural ecosystem and soil health 2. Technological Transformation: Pioneering the transition from conventional, chemical-intensive farming to a sophisticated Regenerative-Circular model by integrating advanced Bio-Digital Intelligence, including Artificial Intelligence (AI), Internet of Things (IoT), and precision robotics 3. Islamic Innovation (<i>Tajdid</i>): Upholding the Muhammadiyah principle of "<i>Tajdid</i>" (renewal) by harmonizing modern agricultural sciences with divine values, ensuring that every technological advancement serves social justice and the welfare of the "<i>Ummah</i>" 4. Global Food Sustainability: Committing to the achievement of global food security through sustainable practices that are resilient to climate change, resource-efficient, and economically viable for future generations 5. Center of Excellence: Establishing an educational ecosystem that serves as a global benchmark for industry-integrated learning, particularly in the sectors of seed technology, sustainable plantation management, and biological agro-inputs
C.	Graduate Learning Outcomes	:	<ol style="list-style-type: none"> 1. Regenerative Agrotechnology Researchers: Experts capable of designing and executing cutting-edge research to solve land degradation and food security issues through a regenerative approach 2. Digital Agricultural Technology Specialists: Professionals who master the use of UAVs (drones), remote sensing, and big data analytics to create high-efficiency precision farming systems 3. Regenerative Agrotechnology Entrepreneurs: Visionary business leaders who can build sustainable "green businesses" that are economically profitable and ecologically restorative 4. Regenerative Agrotechnology Practitioners: Field managers and consultants who implement Good Agricultural Practices (GAP), integrated with regenerative and biological input technologies

D.	Learning Outcomes	: <ol style="list-style-type: none"> 1. Attitude & Ethics: Internalizing Islamic values (IILMAN) and professional ethics in agricultural practices 2. Communication: Mastering scientific communication and leadership in national and international professional environments 3. Critical Thinking: Analyzing complex socio-ecological problems and making strategic data-driven decisions. 4. Core Knowledge: Mastering botanical science, soil science, agroecology, and bio-digital technology 5. Technical Skills: Designing, implementing, and evaluating regenerative production systems using digital innovation 																																																												
		6. Social Empowerment: Developing green businesses and empowering communities through participatory approaches																																																												
E.	Courses	: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">Semester I</td> </tr> <tr> <td>1. Civics</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td>2. Pancasila</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td>3. Faith and Humanity</td> <td style="text-align: right;">1 credit</td> </tr> <tr> <td>4. Productive Skills of Foreign Languages for Specific Purpose</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td>5. Agricultural Biology</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td>6. Indonesian Language for Scientific Communication</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td>7. Integrated Natural Sciences: Chemistry, Physics, Agricultural Mathematics</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td>8. Agronomy: Growth, Development, Propagation, and Crop Cultivation</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td>9. Innovative Agro-complex</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td colspan="2" style="text-align: center;">Semester II</td> </tr> <tr> <td>1. Entrepreneurship</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td>2. Worship and Human Relations</td> <td style="text-align: right;">1 credit</td> </tr> <tr> <td>3. English Proficiency Test Preparation Course</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td>4. Plant Biochemistry</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td>5. Plant Physiology</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td>6. Agro-climatology</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td>7. Identification of Plant Pathogenic Organisms</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td>8. Agricultural Computer Applications</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td>9. Soil Science</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td colspan="2" style="text-align: center;">Semester III</td> </tr> <tr> <td>1. Muhammadiyah Studies</td> <td style="text-align: right;">1 credit</td> </tr> <tr> <td>2. Genetics</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td>3. Statistics</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td>4. Microbiology and Organic Agriculture</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td>5. Horticultural Crop Business Incubation</td> <td style="text-align: right;">2 credits</td> </tr> <tr> <td>6. In-vitro Culture</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td>7. Plant Protection Management</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td>8. Plant Protection Management for Horticulture</td> <td style="text-align: right;">3 credits</td> </tr> <tr> <td colspan="2" style="text-align: center;">Semester IV</td> </tr> </table>	Semester I		1. Civics	2 credits	2. Pancasila	2 credits	3. Faith and Humanity	1 credit	4. Productive Skills of Foreign Languages for Specific Purpose	2 credits	5. Agricultural Biology	3 credits	6. Indonesian Language for Scientific Communication	2 credits	7. Integrated Natural Sciences: Chemistry, Physics, Agricultural Mathematics	2 credits	8. Agronomy: Growth, Development, Propagation, and Crop Cultivation	3 credits	9. Innovative Agro-complex	2 credits	Semester II		1. Entrepreneurship	2 credits	2. Worship and Human Relations	1 credit	3. English Proficiency Test Preparation Course	2 credits	4. Plant Biochemistry	3 credits	5. Plant Physiology	3 credits	6. Agro-climatology	3 credits	7. Identification of Plant Pathogenic Organisms	3 credits	8. Agricultural Computer Applications	2 credits	9. Soil Science	3 credits	Semester III		1. Muhammadiyah Studies	1 credit	2. Genetics	3 credits	3. Statistics	2 credits	4. Microbiology and Organic Agriculture	3 credits	5. Horticultural Crop Business Incubation	2 credits	6. In-vitro Culture	3 credits	7. Plant Protection Management	3 credits	8. Plant Protection Management for Horticulture	3 credits	Semester IV	
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		1. Seed Technology	3 credits
		2. Islam and Science, Technology, and Arts	1 credit
		3. Agricultural Mechanization	3 credits
		4. Plant Breeding	3 credits
		5. Experimental Design	3 credits
		6. Food Crop Business Incubation	2 credits
		7. Agricultural Biotechnology	3 credits
		8. Soil Fertility and Land Suitability Analysis	3 credits
		9. Plant Protection Management for Food Crops	3 credits
		Semester V	
		1. Post-Harvest Management	3 credits
		2. Landscape/Gardening	3 credits
		3. Agronomic Research Methods	3 credits
		4. IPM for Industrial Crops	3 credits
		5. Urban Agriculture	3 credits
		6. Seed Production	3 credits
		7. Smart and Precision Agriculture	3 credits
		Semester VI	
		1. Plant Nutrition and Growth Regulators	2 credits (CoE Fertilizer and Pesticide Industry)
		2. Agricultural Waste Management	3 credits (CoE Fertilizer and Pesticide Industry)
		3. Integrated and Sustainable Agriculture	3 credits (CoE Fertilizer and Pesticide Industry)
		4. Business and Entrepreneurship in Fertilizer & Pesticide Industry	3 credits (CoE Fertilizer and Pesticide Industry)
		5. Fertilizer Production Management and Technology	3 credits (CoE Fertilizer and Pesticide Industry)
		6. Fertilizer and Pesticide Marketing Management	3 credits (CoE Fertilizer and Pesticide Industry)

			Industry)
		7. Fertilizer and Pesticide Business Opportunities & Strategies	2 credits (CoE Fertilizer and Pesticide Industry)
		8. Innovative Technology and Pesticide Application	3 credits (CoE Fertilizer and Pesticide Industry)
		9. Identification and Control Technology of Plant Pathogens	3 credits (CoE Fertilizer and Pesticide Industry)
		10. Counseling and Communication for Fertilizer & Pesticide Aspects	3 credits (CoE Fertilizer and Pesticide Industry)
		11. Sustainable Palm Oil Plantation Management	4 credits (CoE palm oil)
		12. Sustainable Palm Oil Business Management & Orientation	3 credits (CoE palm oil)
		13. Sustainable Palm Oil Plant Production	4 credits (CoE palm oil)
		14. Fertilization Management and Soil & Water Conservation	2 credits (CoE palm oil)
		15. Sustainable Palm Oil Plant Protection	3 credits (CoE palm oil)
		16. Sustainable Palm Oil Plant Breeding & Nursery	3 credits (CoE palm oil)
		17. Ecology & Physiology of Palm Oil Plants	2 credits (CoE palm oil)
		18. Plant Growth Analysis	3 credits
		19. Orchidology	2 credits
		20. Marginal Land Management	2 credits
		21. Digital Techniques in Agronomy	2 credits
		22. Agro e-commerce	3 credits
		23. Applied Plant Breeding	3 credits (CoE seed industry)
		24. Seed Product and Market Development	3 credits (CoE seed industry)

		25. Seed Processing	3 credits (CoE seed industry)
		26. Seed Marketing/Commerce	3 credits (CoE seed industry)
		27. Seed Resource Management	3 credits (CoE seed industry)
		28. Seed Production Company Orientation	2 credits (CoE seed industry)
		29. Seed Production Techniques	3 credits (CoE seed industry)
		30. Scientific Writing and Publication	2 credits
		31. Applied Statistics	3 credits
		32. IPM for Horticulture II	3 credits
		33. Agro-Industrial Business Incubation	4 credits
		34. Floriculture	2 credits
		Semester VII	
		1. Student Community Service (PMM): Fertilizer/Pesticide Production	4 credits (CoE Fertilizer and Pesticide Industry)
		2. Business Partners in Fertilizer/Pesticide Production	3 credits (CoE Fertilizer and Pesticide Industry)
		3. Field Study in Fertilizer/Pesticide Industry	3 credits (CoE Fertilizer and Pesticide Industry)
		4. Professional Internship in Fertilizer/Pesticide Industry	3 credits (CoE Fertilizer and Pesticide Industry)
		5. Business Partners in Vegetable Seed Production	6 credits (CoE seed industry)
		6. Business Partners in Fruit Seed Production	3 credits (CoE seed industry)
		7. Social Community in Palm Oil Industry	4 credits (CoE palm oil)
		8. Plasma Farmers in Palm Oil Industry	3 credits (CoE palm oil)
		9. Business Partners in Palm Oil Industry	3 credits (CoE palm oil)
		10. Professional Incubation in Palm Oil Industry	4 credits (CoE palm oil)

			11. Professional Internship in Palm Oil Industry	6 credits (CoE palm oil)
			12. PMM: Kologa Farmers in Seed Industry	4 credits (CoE seed industry)
			13. Professional Incubation in Fertilizer/Pesticide Industry	4 credits (CoE Fertilizer and Pesticide Industry)
			14. Community Service	4 credits
			15. Internship	4 credits
			16. Thesis	6 credits
			Total	144 credits
F.	Value Propositions	:	<ol style="list-style-type: none"> 1. Regenerative Paradigm: Focusing on restoring soil health and agroecosystems, not only production 2. Bio-Digital Intelligence: Integration of AI, Drones (UAV), IoT, and Big Data in the curriculum 3. Center of Excellence (CoE): Specialized industrial programs in Seed Industry, Sustainable Palm Oil, and Bio-Fertilizer/Pesticide Industry 4. Character Building: Integration of "IIIMAN" (<i>Ikhlas, Ihsan, Itqan, Ma'unah, Amanah, Nazahah</i>) in every learning aspect 5. Industry Link & Match: Direct internships with global partners, such as Syngenta, PTPN, and Astra Agro Lestari 	