CURRICULUM DOCUMENT
STUDY PROGRAMME:
INFORMATION TECHNOLOGY EDUCATION

FACULTY OF MATHEMATICS, SCIENCE AND INFORMATION TECHNOLOGY EDUCATION
UNIVERSITY PGRI SEMARANG
2025

DOCUMENT

Development of Higher Education Curricula

Information Technology Education Programme

Semarang, 2025

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Study Programme	**: Information Technology Education**
Faculty	**: Mathematics, Science and Information Technology Education**

UNIVERSITY PGRI SEMARANG
2025

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FOREWORD

We offer our heartfelt thanks to the Almighty God for His grace and blessings, which have enabled the curriculum document for the Information Technology Education Study Programme at the Faculty of Mathematics, Natural Sciences and Information Technology, University of the Indonesian Teachers' Union, Semarang, to be compiled and refined. The compilation of this document forms part of the institution's commitment to ensuring the quality of higher education and addressing the challenges of an era that continues to evolve dynamically, particularly in the transition from the Fourth Industrial Revolution towards the Society 5.0 era.

This curriculum document has been designed in accordance with various national regulations, such as Law No. 12 of 2012 on Higher Education, the National Standards for Higher Education (SN-Dikti), and refers to the Indonesian National Qualifications Framework (KKNI), Ministry of Education, Culture, Research and Technology Regulation No. 53 of 2023 on Quality Assurance in Higher Education, subsequently updated by Ministry of Education, Culture, Research and Technology Regulation No. 39 of 2025. Curriculum development is carried out collaboratively and participatively, involving various stakeholders, including lecturers, students, alumni, employers, and partners from the business and industrial sectors (DUDI), to ensure alignment between graduate profiles, learning outcomes, and societal needs.

This curriculum not only emphasises the mastery of academic competencies, but also character development, 21st-century skills, digital literacy, and the ability to think critically, creatively, collaboratively and communicatively. Through an *Outcome-Based Education* (OBE) approach and flexibility in off-campus learning, students are expected to develop themselves as adaptive, reflective, and contributory educators amidst rapid global change.

We would like to express our gratitude to the entire curriculum development team, lecturers, educational staff, and all parties who have contributed to the preparation of this document. May this curriculum document serve as the primary guide for the delivery of high-quality, relevant, and meaningful education for the entire academic community of the Information Technology Education programme.

Semarang, September 2025
Dean of the Faculty of Mathematics, Natural Sciences and Information Technology
University of the Indonesian Teachers' Union, Semarang

Dr. Supandi, S.Si., M.Si.
NPP 097401245

PROGRAMME IDENTITY

No	Name of Higher Education Institution (HEI)	UNIVERSITY PGRI SEMARANG (UPGRIS)
1	Faculty/Postgraduate	Mathematics, Science, and Information Technology Education
2	Study Program	Information Technology Education (PTI)
3	Accreditation Status	Excellent
4	Level of Education	Bachelor's
5	Graduate Qualification	B.Ed.
6	Academic Vision	To develop information technology education that is technopreneur-oriented, producing outstanding graduates with a strong sense of identity
7	Number of Students	37
8	Number of Lecturers	5
9	Programme Address	Jl. Sidodadi Timur No. 24, Karangtempel, Semarang Timur District, Semarang City, Central Java, 50232
10	Tel	(024) 8316377
11	Programme Website	https://pti.upgris.ac.id

1. Foundations of Curriculum Design and Development

1.1. *University Values*

In the Master Plan for Development (RIP) of the University PGRI Semarang (UPGRIS) for the period 2015–2034, UPGRIS has established its long-term vision as ***'The Meaning University'***, namely a university that serves as **a provider, creator, and guardian of the meaning of life**. This vision embodies the fundamental spirit of developing education that is not only academically excellent but also meaningful in terms of life values.

Furthermore, through UPGRIS Rector's Decision No. 013.a/SK/UPGRIS/II/2025, it was established that the university's value system (*university value*) is one of **the learning outcomes for UPGRIS graduates**, namely: **"Demonstrating character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty."**

As part of UPGRIS, **the Information Technology Education (PTI) Programme** internalises these *university values* in all learning activities and in the character development of students. Furthermore, the programme also incorporates distinctive values tailored to **the graduate profile attributes**, to cultivate professional, reflective, and transformative mathematics educators. These additional *values* include:

1. **Thinking logically, critically, and systematically** when solving mathematical and learning problems.
2. **An open and collaborative attitude** when facing technological developments and modern pedagogical approaches.
3. **Upholding academic ethics and scientific integrity** in all teaching and research practices.
4. **A focus on meaningful learning**, using mathematics as a means of developing students' reasoning and character.

Through the integration of *university values* and the distinctive values of the degree programme, graduates of the Mathematics Education programme at UPGRIS are expected to become **educators of strong character, who are professional and adaptable to the challenges of the modern world**, whilst upholding the meaning of life in line with the vision *of The Meaning University.*

1.2. Philosophical Foundation

This foundation provides philosophical guidance at the stages of planning, implementation, and improvement of educational quality (Ornstein & Hunkins, 2014). Curriculum development requires a philosophy as a framework for thinking: how knowledge is examined and studied so that students understand the essence of life and possess the ability to improve their quality of life, both individually and within society.

The philosophy of education is a statement agreed upon by the team within the Study Programme that establishes several foundations, including:

- ✓ Educational objectives;
- ✓ Academic disciplines / professional disciplines;
- ✓ The approach to teaching methods used;
- ✓ Approaches to assessment and evaluation strategies employed;

1.3. Sociological Foundations

This foundation provides the basis for the development of study programme curricula within UPGRIS as an educational framework comprising objectives, content, learning activities and a positive learning environment for the acquisition of learning experiences relevant to learners' personal and social development (Ornstein & Hunkins, 2014:128). Study programme curricula must be capable of transmitting culture from one generation to the next. Culture is understood as part of *group* knowledge (Ross, 1963: 85).

1.4. Psychological Foundations

The curriculum of the Information Technology Education Study Programme is formulated in accordance with the laws and regulations in force in Indonesia, which serve as the legal basis for the development of higher education. The primary legal foundations include Law No. 20 of 2003 on the National Education System, which states that education aims to develop the potential of learners so that they become people of faith, piety, knowledge, competence, creativity, and independence, and become democratic and responsible citizens.

Furthermore, the curriculum also refers to Law No. 12 of 2012 on Higher Education, particularly the articles emphasising the importance of academic development, lifelong learning, and the relevance of education to the needs of society and the world of work. This curriculum has been developed in accordance with the Indonesian National Qualifications Framework (KKNI), the National Standards for Higher Education (SN-Dikti), and curriculum guidelines based on *Outcome-Based Education* (OBE) as well as the 'Merdeka Belajar Kampus Merdeka' initiative, which, pursuant to Ministry of Education, Culture, Research and Technology Regulation No. 39 of 2025, is termed as **'Fulfilment of Learning Load Outside the Study Programme**'.

1.5. Historical Foundation

In this regard, the Information Technology Education Study Programme (PTI) utilises a historical foundation, which provides **a basis** for a **curriculum** capable of facilitating students' learning in line with the times; a curriculum capable of passing on cultural values and the golden history of the past, and capable of preparing students to live better in the 21st century, play an active role in the Industry 4.0 era or even as we move towards the Industry 5.0 era, and be able to interpret the signs of its development.

Examples of some of the skills required in the 21st century, which fall into three main aspects, are:

1. ***Cognitive skills***
   a. *Processing and cognitive strategies*
      - ✓ *Critical thinking*
      - ✓ *Problem-solving*
      - ✓ *Analysis*

- ✓ *Logical reasoning*
- ✓ *Interpretation*
- ✓ *Decision-making*
- ✓ *Executive Functioning*

b. *Knowledge*

- ✓ *Literacy and communication skills*
- ✓ *Active listening skills*
- ✓ *Knowledge of the disciplines*
- ✓ *Ability to use evidence and make judgements based on information*
- ✓ *Digital literacy*

c. *Creativity*

- ✓ *Creativity*
- ✓ *Innovation*

2. *Interpersonal skills*

a. *Teamwork skills*

- ✓ *Communication*
- ✓ *Collaboration*
- ✓ *Teamwork*
- ✓ *Cooperation*
- ✓ *Coordination*
- ✓ *Empathy, perspective-taking*
- ✓ *Trust*
- ✓ *Service-oriented*
- ✓ *Conflict resolution*
- ✓ *Negotiation*

b. *Leadership*

- ✓ *Leadership*
- ✓ *Responsibility*
- ✓ *Assertive communication*

- ✓ *Self-presentation*
- ✓ *Social influence*

3. ***Intrapersonal skills***

   a. *Intellectual openness*

   - ✓ *Flexibility*
   - ✓ *Adaptability*
   - ✓ *Appreciation of art and culture*
   - ✓ *Personal and social responsibility*
   - ✓ *Intercultural competence*
   - ✓ *Appreciation of diversity*
   - ✓ *Capacity for lifelong learning*
   - ✓ *Intellectual interest and curiosity*

   b. *Work ethic, responsibility*

   - ✓ *Initiative*
   - ✓ *Self-direction*
   - ✓ *Responsibility*
   - ✓ *Perseverance*
   - ✓ *Productivity*
   - ✓ *Persistence*
   - ✓ *Self-regulation*
   - ✓ *Metacognitive skills, foresight, reflective skills*
   - ✓ *Professionalism*
   - ✓ *Ethics*
   - ✓ *Integrity*
   - ✓ *Citizenship*
   - ✓ *Work orientation*

   c. *Self-efficacy*

   - ✓ *Self-regulation (self-monitoring and self-assessment)*
   - ✓ *Physical and mental health*

1.6. Legal Basis

1. Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers (State Gazette of the Republic of Indonesia Year 2005 Number 157, Supplement to the State Gazette of the Republic of Indonesia Number 4586).
2. Law of the Republic of Indonesia Number 12 of 2012 concerning Higher Education (State Gazette of the Republic of Indonesia Year 2012 Number 158, Supplement to the State Gazette of the Republic of Indonesia Number 5336).
3. Government Regulation No. 4 of 2014 on the Organisation of Higher Education and the Management of Higher Education Institutions.
4. Presidential Regulation of the Republic of Indonesia No. 8 of 2012, on the Indonesian National Qualifications Framework (KKNI).
5. Regulation of the Minister of Education and Culture of the Republic of Indonesia No. 73 of 2013 on the Implementation of the KKNI in the Higher Education Sector.
6. Regulation of the Minister of Education and Culture No. 7 of 2020 on the Establishment, Amendment, and Dissolution of State Higher Education Institutions, and the Establishment, Amendment, and Revocation of Licences for Private Higher Education Institutions;
7. Regulation of the Minister of Education, Culture, Research, and Technology No. 13 of 2022 on Amendments to Regulation of the Minister of Education and Culture No. 22 of 2020 on the Strategic Plan of the Ministry of Education and Culture for the Years 2020–2024;
8. Regulation of the Minister of Education, Culture, Research and Technology No. 6 of 2022 concerning Diplomas, Competency Certificates, Professional Certificates, Degrees, and the Equivalence of Diplomas from Higher Education Institutions in Other Countries;
9. Regulation of the Minister of Education, Culture, Research and Technology No. 53 of 2023 on Quality Assurance in Higher Education;
10. Regulation of the Minister of Education, Science and Technology No. 39 of 2025 on Quality Assurance in Higher Education;
11. Decision of the Minister of Research, Technology, and Higher Education No. 123 of 2019 on Internships and the Recognition of Semester Credit Units for Industrial Internships for Bachelor's and Applied Bachelor's Programmes;

12. Decision of the Independent Education Accreditation Agency No. 439/SK/LAMDIK/Ak/S/III/2025 on the Accreditation Rating of the Information Technology Education Study Programme ( ) within the Bachelor's Programme at PGRI University of Semarang, Semarang City
13. Decision of the YPLP PT PGRI Semarang No. 075/P.Y/U/Kpts/3.1/YPLP PT PGRI/V/2019 dated 10 May 2019 regarding the Statutes of the University of PGRI Semarang;
14. Decision of the Rector of the University of the Indonesian Teachers' Union, Semarang, No. 056/SK/UPGRIS/IX/2024 regarding the Establishment of the Vision, Mission, and Objectives of the University of the Indonesian Teachers' Union, Semarang;
15. Decision of the Rector of the University of the Indonesian Teachers' Union, Semarang, No. 013.a/SK/UPGRIS/II/2025 regarding the Learning Outcomes of Graduates from Study Programmes at the University of the Indonesian Teachers' Union, Semarang;
16. Decision of the Rector of the University of the Indonesian Teachers' Association, Semarang, Number 012/SK/UPGRIS/II/2025 regarding the Establishment of the Structure and Distribution of Courses for Undergraduate Students at the University of the Indonesian Teachers' Association, Semarang;
17. Decision of the Rector of the University PGRI, Semarang, Number 014/SK/UPGRIS/II/2025 regarding the Determination of Course Credits for Master's Degree Students at the University PGRI , Semarang.
18. Decision of the Rector of the University PGRI , Semarang, Number 034.a/SK/UPGRIS/IV/2025 regarding the Determination of the Distribution of General Courses/Compulsory Curriculum Courses and UPGRIS Distinctive Courses within the University PGRI , Semarang.
19. Rector's Decree on the Vision, Mission, Objectives, and Targets of the Faculty/Postgraduate Programme.
20. Rector's Decree on the Academic Vision of Study Programmes.
21. Regulation of the Rector of the University of PGRI Semarang No. 132.C/SK/UPGRIS/IV/2014 regarding Guidelines for the Formulation of the Vision, Mission, Objectives, and Targets of the University of PGRI Semarang.

22. Decision of the Rector of PGRI University of Semarang No. 439.A/SK/UPGRIS/IV/2014 regarding the establishment of the vision and mission of PGRI University of Semarang.
23. Decision of the Dean of the Faculty of Mathematics, Natural Sciences and Information Technology (FPMIPATI) at PGRI University of Semarang No. 26.A/3.3/SK/FPMIPATI/UPGRIS/XII/2020 regarding the Strategic Plan (RENSTRA) of the Faculty of Mathematics, Natural Sciences and Information Technology (FPMIPATI) at PGRI University of Semarang 2020–2024
24. Assignment Letter No. 75/SK/FPMIPATI/UPGRIS/11/2020 regarding the FPMIPATI Vision and Mission Formulation Team.
25. Dean's Decree No. 120/3/FPMIPATI/UPGRIS/III/2015 regarding the Approval of the Vision and Mission of FPMIPATI.
26. Assignment Letter No. 85.C/3.1/FPMIPATI/UPGRIS/VIII/2022 regarding the Team for Drafting the Academic Vision and Objectives of the Information Technology Education Study Programme
27. Dean's Decision No. 17/3.3/SK/FPMIPATI/UPGRIS/IX/2022 regarding the Approval of the Academic Vision, Objectives and Strategies for Information Technology Education.
28. Rector's Regulation No. 005.a/PR/UPGRIS/X/2023 regarding Guidelines for the Admission of New Students to UPGRIS for the 2024/2025 Academic Year

2. Curriculum Evaluation & *Tracer Study*

1.1. Curriculum Evaluation

The PTI Study Programme carries out evaluations of the implementation of the existing curriculum – and the curriculum to be developed. Several theories regarding curriculum evaluation are outlined in Appendix C, namely:

1. *Ex-ante*, interim and *ex-post* evaluation (*Petra Pistor and Karl-Heinz Stammen, 2017*)
2. *Formative and summative* evaluation (*Rossi, Lipsey, and Freeman 2004, p. 65*)
3. *'Provus'* non-conformity evaluation (Higher Education Curriculum Book, 2020)

There are two types of curriculum evaluation, namely:

1. *Formative* Evaluation

Formative evaluation does not always lead to changes in the curriculum, but it can alter strategies within curriculum implementation; for example: in teaching methods, additions or changes to sub-sections, sub-topics or topics within course content, in line with current developments in science and technology

2. *Summative* Evaluation

   Summative evaluation is an evaluation that leads to the revision or development of the curriculum and impacts the implementation of the new curriculum. (taking into account the principles of curriculum development outlined in Chapter 1)

Curriculum evaluation explains:

1. Evaluation mechanisms,
2. The elements of the curriculum being evaluated from the existing curriculum,
3. The results of the evaluation and what needs to be improved.

The Information Technology Education study programme commenced in July 2013, with the following accreditation history:

- Grade C accreditation from the National Accreditation Board for Higher Education (BAN-PT) was obtained via Decision No. 1567/SK/BAN-PT/Akred/S/V/2017.
- Grade B accreditation from the National Accreditation Board for Higher Education (BAN-PT) was obtained via Decision No. 5515/SK/BAN-PT/Akred/S/IX/2020
- The 'Excellent' Accreditation Status was granted by Decision No. 439/SK/LAMDIK/Ak/S/III/2025 of the Independent Education Accreditation Agency

This accreditation demonstrates national recognition of the quality of various aspects of the delivery of educational programmes within the study programme. Internally, the PTI Study Programme follows an academic quality assurance cycle through Internal Quality Audit (AMI) activities organised by UPGRIS on a regular annual basis.

In 2025, a major (biennial) evaluation of the PTI Study Programme curriculum was conducted to align with government policies regarding the implementation of **the Fulfilment of Study Load Outside the Study Programme**. The evaluation included a review of the vision and mission, the Independent Professional Profile (PPM), graduate learning outcomes (GLOs), *updates to* course materials, and the establishment of the curriculum structure.

Fundamental changes to the Information Technology Education Programme curriculum in 2024. Evaluations of the implementation of the Information Technology

Education (PTI) Programme curriculum are conducted periodically to ensure alignment with the institution's vision, student needs, and advancements in science and technology. This evaluation comprises two types: **formative** and **summative evaluation**, involving various *stakeholders* such as lecturers, students, alumni, graduate employers, and partner organisations.

The changes to the 2025 Curriculum also align with feedback obtained from *benchmarking* activities carried out by the Information Technology Education Study Programme through visits to other universities, namely Satya Wacana Christian University and the Islamic University of Indonesia, as well as the results of discussions with other universities that visited the study programme.

Comprehensively, the implementation of *outcome-based education* in the Information Technology Education study programme involves three integral components, namely:

a. *Outcome-based curriculum*.

   In this regard, one of the key questions is, 'What will graduates be able to do after completing the Information Technology Education programme?'. To answer this question, the Information Technology Education programme has formulated explicit Learning Outcomes for the 2025 curriculum.

b. *Outcome-based learning and teaching*

   Next, this aspect asks, "How can we ensure students achieve these learning outcomes?" The Information Technology Education programme implements a curriculum centred on student-led learning.

c. *Outcome-based assessment*

   "How are the learning outcomes achieved by students measured?" is the next key question. To answer this, the Information Technology Education programme will conduct learning assessments using assessment rubrics to measure the extent to which learning outcomes have been achieved. This integrates an outcomes-based education paradigm aligned with the Indonesian National Qualifications Framework (KKNI).

Table 2.1. Evaluation of the 2022 Curriculum and Follow-up Actions for the 2025 Curriculum

Evaluation Components	Review	Action Plan
Academic Vision – Educational Objectives – and Strategies for Achieving Educational Objectives		
a. Relevance of the Academic Vision, Educational Objectives, and Strategies for Achieving Educational Objectives to the Faculty's VMTS	In line with the Faculty's VMTS	Maintaining the relevance of achievement
b. Relevance of the Academic Vision, Educational Objectives, and Strategies for Achieving Educational Objectives to learning outcomes	Already in line	Maintaining the achievement of relevance
c. Relevance of the Academic Vision, Educational Objectives, and Strategies for Achieving Educational Objectives to the graduate profile	Too many profiles	Reducing the number of profiles to ensure greater focus
d. Curriculum Alignment with the KKNI (according to the relevant level)	In accordance with	Maintaining alignment
e. Relevance of the Curriculum to Ministerial Regulation No. 39 of 2025	In accordance	Maintaining alignment
f. Relevance of the curriculum to the world of work	Relevant	Ensuring continued relevance
g. Scope of competencies/skills (academic fields of study programmes and the needs/demands of the world of work)	English language skills need to be improved	Add an English for Information Technology course
h. Clarity of competency/skill content	Clear	Reapply
Programme Graduate Profile		
Alignment of the Graduate Profile with the world of work	There are 3 graduate profiles	The graduate profiles remain at 3, tailored to the world of work
Programme Learning Outcomes		
a. Scope of Competencies	Adequate	Aligning with the new graduate profile
b. Clarity of references for formulating learning outcomes	Referring to the PVKTII association	Refers to the latest PVKTII association
c. Coherence of the formulation of learning outcomes	Already coherent	Maintaining coherence
d. Quality of formulation (specific, measurable, and observable)	Already specific, measurable and observable	Maintain
e. Relevance of learning outcomes to graduate profile	Already aligned	maintain
Curriculum structure		
a. Overall coverage of courses at one level (learning outcomes, profile, and courses)	Adequate	Maintaining
b. Interconnection between levels (Bachelor's and Master's, where applicable)	-	-
c. Organisation of courses (University-level courses, faculty-level courses, programme-specific courses (compulsory and optional))	Already organised	Maintained
d. Relevance of the course structure to the policy on fulfilling study load requirements outside the degree programme (for Bachelor's degree)	relevant	Maintain
Course Description		
a. Depth of learning material	Adequate	maintain
b. Scope of learning material	Adequate	Maintain
c. Relevance of CLO to PLO	Relevant	Maintain
d. Course format (lectures/theory, seminars, practicals, fieldwork, etc.)	Insufficient number of practical sessions	Increase the number of practical sessions
Course distribution		

Evaluation Components	Review	Action Plan
a. Academic sequence of courses	Appropriate	Maintain
b. Proportion of compulsory courses, elective courses, and general education courses	Proportional	maintaining
c. The total credit load per semester	Proportional	maintain
Human Resources (HR)		
a. Academic relevance	Relevance	maintaining
b. Experience and Expertise	Suitable	maintaining
c. Qualifications and adequacy of educational staff based on their job type (administration, librarians, technicians, laboratory assistants, etc.)	Adequate	maintaining
Facilities and Infrastructure		
a. Laboratories (workshops/studios/fields/etc.)	Adequate	maintain
b. Laboratory equipment and materials (workshop/garage/studio/field/etc.)	Adequate	maintain
c. Library	Adequate	maintain
d. Classrooms	Adequate	maintain
Curriculum flexibility		
Teaching Materials		
a. Semester Lesson Plan	Not yet 100%	Complete to 100%
b. Teaching Materials	Adequate	Maintain
c. Media (ICT)	Adequate	maintain
d. Device support for PLO achievement efforts	Adequate	maintain
Learning Process		
a. Transformation of teaching and learning experiences	Adequate	maintaining
b. Use of case-based learning methods or team-based project learning with an assessment weighting of more than 50%	Not all courses	All courses
c. Alignment of the learning process with the Course Syllabus	Compliant	Maintained
d. Compliance in implementing learning through SPADA UPGRIS	Not yet 100%	Aiming for 100%
e. The learning process is collaborative, involving interaction between learners	Already implemented	Maintaining
f. Implementation of character values (university values) in and outside the classroom	Already implemented	Maintaining
g. Lecturer attendance	16 times	16 times
h. Student attendance	Meeting	Maintained
Learning assessment		
a. Assessment planning contract	In accordance with	maintain
b. Assessment procedures	In accordance	maintain
c. Scope of assessment (attitudes, knowledge, general and specific skills)	Already covers all aspects	Maintain
d. Appropriateness of assessment techniques in relation to assessment aspects	Appropriate	Maintain
e. Verification of assessment instruments	Verified	Maintain
f. Marking in accordance with applicable regulations	In accordance	Maintain
g. Follow-up on assessment results (grading, enrichment, remedial work)	Compliant	Maintain
Graduates		
a. Cumulative Grade Point Average (CGPA)	3.89	
b. Duration of Study	4.09 years	

Evaluation Components	Review	Action Plan
c. Graduate employment rate	88.9%	
d. Graduate waiting period	< 6 months	
e. Relevance of employment to field of expertise	96%	
f. Starting salary	Rp 2,505,319	
g. Graduate distribution	88.9% are in employment, and 11.1% are seeking employment	Enhanced *tracer study*
h. Employer Satisfaction	The majority of graduate employers rate alumni skills as very good (83.27%) or good (16.73%)	Increased partner collaboration
i. Academic achievements	International academic achievements remain insufficient	To be improved
j. Professional certification	Multimedia Learning Materials Developer	Addition of professional certifications

1.2. *Tracer Study*

To design an appropriate curriculum, the Information Technology Education Study Programme conducts *tracer studies* and analyses feedback from stakeholders or industry partners. Feedback is gathered through surveys, *tracer studies*, questionnaires and *hearings* in discussion forums. The *stakeholders* or industry partners involved include internal *stakeholders*, namely lecturers, students, educational staff, and alumni, and external *stakeholders*, namely users, study programme associations, and industry partners. A summary of the results of this data collection is presented in **Table 2.2**.

Table 2.2. Stakeholder Input

Stakeholder Stakeholder	Input
Students	1. Relevance of the curriculum to the world of work. 2. Addition and enhancement of courses. 3. Human resource management and leadership. 4. Strengthening technological competencies.
Alumni	1. Work efficiency, Health and Safety, 6S, Work Management. 2. Learning Information Technology is absolutely essential, whether for educational or non-educational purposes. 3. *Expert* in using *Microsoft Office Excel* 4. Equipment analysis
Industry Partners	1. Learning through the development of case-based learning and project-based learning is essential for enhancing problem-solving skills 2. Communication skills are developed so that graduates master better communication skills 3. Curriculum development: in this regard, course modules should be adapted to current technological developments and those anticipated over the next five years 4. Research on technology can be conducted in collaboration with partners or industry

Stakeholder Stakeholder	Input
	5. Materials related to the design and development of applications, information systems, or the development of learning media should be added 6. Add the course 'Multi-User Information Systems' 7. Add material on AI, digital systems, content creation, and Android app development 8. Enhancing the application of theory in everyday life.

Furthermore, *the tracer study* yielded the following information: (data from the ICT Unit)

1. Employment status
2. Average Monthly Income
3. Work Location
4. Field of Work
5. Length of Service
6. Job Title
7. Relationship between field of study and job
8. Feedback on the Curriculum
9. Feedback on Programme Development
10. Follow-up on the Study Programme

Table 2.3. Curriculum Feedback from Alumni and Curriculum Follow-up Plan

Curriculum Input	Follow-up Plan
Information Systems material needs to be explored in greater depth	Review the syllabuses for the Information Systems and Database Systems modules to ensure the material is more in-depth and relevant to the industry
Increase practical experience, such as work placements	Establish partnerships with DU/DI as internship providers.
Strengthen *life skills*, emotional management, *multitasking*, *public speaking*, marketing, entrepreneurship, information technology, and interactive media.	● Provide training related to life skills. ● Review the Entrepreneurship course syllabus to enhance entrepreneurial and marketing skills. ● Integrate emotional management and public speaking skills into specific courses. ● Integrate interactive learning media into lectures to familiarise students with modern technology.
Pedagogical materials must be more in-depth and practical.	Evaluate lesson plans and assessment tools for pedagogy modules.
Balance theory and practice to ensure students are work-ready	● Implement project-based learning (*PBL*). ● Provide an internship programme.

Table 2.4. Programme Input from Alumni and Programme Action Plan

Programme Input	Action Plan

Align the curriculum with the world of work.	• Conduct periodic *tracer studies* to understand the skills and competencies required in the workplace. • Revitalise the curriculum based on the needs of the workplace.
Please clarify the role of academic tutors.	Communicate and remind academic tutors of their roles at every programme meeting
Please clarify the conversion of modules for off-campus learning (BPLK)	The conversion of PBLK courses is already included in the curriculum and this has been communicated to students

1.3. *SWOT analysis*

Based on the results of *the tracer study* and analysis of *stakeholder* input, a SWOT analysis has been conducted to serve as a basis for formulating strategies to achieve the objectives. Subsequently, criteria and success indicators for the TS Study Programme were drawn up to facilitate the monitoring and evaluation of the success of the programmes that have been established. In the SWOT analysis of the vision, mission, goals and objectives, as well as the strategies for achieving them, the four SWOT elements of the TS Study Programme were identified, comprising *strengths, weaknesses,* opportunities and *threats.*

Based on the SWOT analysis of these four elements, the following four strategies were established:

a. SO Strategy (*Strength-Opportunity*), which is a strategy to utilise strengths to capitalise on opportunities.
b. WO Strategy (*Weakness-Opportunity*), namely a strategy to address constraints/weaknesses by capitalising on opportunities
c. ST Strategy (*Strength-Threat*), which is a strategy for using strengths to counter threats
d. WT Strategy (*Weakness-Threat*), which is a strategy to address constraints/weaknesses in order to overcome threats.

These four strategies are shown in the SWOT matrix in **Table 2.5.**

Table 2.5. SWOT Matrix

SWOT Elements	**Internal**	
	***Strengths* / Potential**	***Weaknesses***
External	**SO Strategy**	**WO Strategy**
	a) Enhancing understanding and internalisation of VMTS achievements by the academic community and all *stakeholders.*	a) Strengthening the synergy of VMTS implementation at UPGRIS within integrated work programmes. Strengthening international networks to support the

SWOT Elements	Internal	
	***Str*engths / Potential**	***Weak*nesses**
		strategic performance of study programmes (IKS), particularly international IKS.
	b) Optimising lecturers' public leadership as representatives of public duties in supporting the Faculty's vision and mission.	b) Involving students in all academic staff research activities
	c) Increasing the number of students participating in competitions, both at national and international levels	c) Recruiting students to participate in the PKM
	d) Utilising alumni networks to help graduates secure employment more quickly	d) Publishing students' final projects in seminars or journals
		e) Improving English language skills through English bridging programmes
	ST Strategy	**WT Strategy**
	1. Strengthening understanding of VMTS, implemented in academic and non-academic activities of the academic community and all programme *stakeholders*	a. Development of methods for promoting VMTS and conducting *tracer studies* for the entire academic community and all stakeholders
	2. Expansion of networks and implementation of cooperation at both national and international levels to accelerate the realisation of the Faculty's excellence.	b. Utilising the alumni network to assist *recent graduates* in securing employment, finding work placement locations, internships, and final project materials.
	3. Establishment of *external advisory bodies* at both national and international levels	c. Promoting English language proficiency among lecturers
	4. Increasing the use of *online* media to enhance understanding of lectures	d. Workshops (*cyber pedagogy*) or enhancing lecturers' skills in teaching via *online* systems in line with Education 4.0 teaching and learning.
	5. Involving the industry in the curriculum or learning, research and community service processes	
	6. Improving the quality of laboratory facilities to meet current technological needs	
	7. Continuous improvement of learning materials to align with industry needs	
	8. Consider involving civil engineering experts from leading ASEAN universities to evaluate all aspects of the study programme	

2. Vision, Mission and Educational Objectives of the Department of Civil Engineering

3.1 University Vision, Mission and Objectives

a. University Vision

To become an outstanding and distinctive university

b. University Mission

1. To provide education that produces outstanding and self-reliant intellectuals;

2. To conduct research as the foundation for the advancement of knowledge and the enhancement of the quality of learning;
3. To carry out community service for the betterment of life and living; and
4. To set an example in the delivery of education, research and community service.

c. The University's Objectives

1. The development of outstanding and self-reliant intellectuals;
2. To achieve academic excellence and research-based learning;
3. The realisation of community service that benefits people's lives and livelihoods; and
4. The implementation of exemplary leadership in the delivery of education, research and community service.

3.2 Vision, Mission and Objectives of the Faculty

a. Vision of the Faculty

To become a Faculty of Mathematics, Natural Sciences and Information Technology that is Excellent and Distinctive

b. Faculty Mission

1. To provide education to produce scholars in the fields of science and Mathematics, Natural Sciences, and Information Technology education who are outstanding and have a distinct identity
2. To conduct research as the foundation for the development of science and the improvement of the quality of learning in the fields of Science and Education in Mathematics, Natural Sciences, and Information Technology
3. To carry out community service as the implementation of research outcomes for the betterment of life and living
4. To set an example in the delivery of education, research, and community service, as well as to engage in partnership activities with domestic and international institutions.

c. Objectives of the Faculty

1. To foster outstanding and distinctive scholars in the fields of Science and Education in Mathematics, Natural Sciences, and Information Technology

2. To achieve high-quality, research-based scholarship and learning in the fields of Mathematics, Natural Sciences, and Information Technology
3. To realise community service as the implementation of research outcomes that benefit people's lives
4. To implement exemplary standards in the delivery of education, research, and community service, as well as to engage in partnership activities with domestic and international institutions.

3.3 Academic Vision and Educational Objectives of the Study Programme

a. Academic Vision of the Study Programme

Academic Vision of the Information Technology Education Study Programme: "To develop academic excellence in Information Technology Education with a focus on expertise in *Software Development* and Multimedia Learning Media."

b. Educational Objectives of the Study Programme

The educational objectives of the Information Technology Education Study Programme (PTI) describe the careers and professional achievements that the programme prepares graduates to attain within a few years of graduation. Table 3.1 sets out the educational objectives of the PTI Study Programme.

Table 3.1. Educational Objectives of the Programme

No	Programme Educational Objective Code	Description of Programme Educational Objectives
1	PEO-1	Graduates master and apply learning theories in the field of information technology to design, implement and evaluate *higher-order thinking* skills (HOTs) in schools or non-formal educational institutions as an implementation of *Technological Pedagogical and Content Knowledge* (TPACK), whilst possessing the character and values of AdAB.
2	PEO-2	Outstanding graduates who master and apply basic research concepts and procedures by collecting, processing, analysing, and presenting data to formulate and solve problems, and make responsible decisions in the field of information technology
3	PEO-3	Outstanding graduates who are capable of designing, creating, implementing and developing projects by identifying resources, requirements, assumptions and constraints in determining project budgets and business returns, and who are capable of creating employment opportunities in the field of information technology

a. Strategies for Achieving the Educational Objectives of the Study Programme

The following are the strategies for achieving the educational objectives of the Information Technology Education programme:

- Enhancing the integration of research and community engagement into learning by developing *the case method* and *project-based learning* is essential to improve students' *problem-solving skills,* as well as to enhance their English language proficiency and other *soft skills* such as public *speaking* and *professional attitude*.
- Undertake various collaborative efforts to produce innovative research to improve the quality of learning, scientific development, and professionalism, as well as to publish research results that are recognised nationally and internationally. Collaborative strategies with partners are applied in the field of research by further increasing *collaborative research*, followed by joint and global publications. The quality and intensity of collaboration among lecturers are increasing, with a focus on the results of inventions and intellectual property rights that are commercialised.
- Undertaking various initiatives to produce Community Service (PkM) works as a follow-up to research outcomes to improve community welfare. Innovation strategies are applied to lecturers' works in the form of reference books across various fields of study published by UPGRIS Press.
- Developing partnership networks with domestic and international institutions to support the implementation of the Four Pillars of Higher Education. Consortium strategies through institutional cooperation with foreign partners are beginning to grow and develop, with an increasing number of students gaining opportunities for *internships* abroad.
- Modelling and habit-forming strategies to ensure the foundation for the development of knowledge through the implementation of AdAB (Adaptive, Enthusiastic, and Integrity-driven) in diversity for students as a manifestation of the duty of setting a good example.
- Implementing governance and management based on *good and clean governance*

3. Graduate Profile, Programme Educational Objec*tives* (PEO) & *Programme Learning Outcomes* (PLO)

3.1 Graduate Profile and Programme Educational Objectives

The Graduate Profile is formulated by the programme based on graduate tracking results, stakeholder input, professional associations, academic consortia, future trends in academic development and expertise, and the results of curriculum evaluation.

The programme's objectives describe the roles graduates can undertake after several years of pursuing their professional careers in the workplace. To achieve these objectives, a description of the roles graduates can undertake upon completing their studies is required; this is known as the graduate profile.

The graduate profile is the role that graduates can fulfil in a specific field of expertise or work after completing their studies, and constitutes the programme's objective or Programme Educational Objective (PEO). The profile may be established based on an analysis of labour market needs required by the government, the business sector and industry, as well as the need to advance science and technology. Ideally, the graduate profile of a study programme should be drawn up by a group of similar study programmes, so that a consensus is reached which is acceptable and can serve as a national reference.

Table 4.1. Graduate Profile and Description

No	Graduate Profile (GP)	Description of Graduate Profile
1	Information Technology Educator	An educator in the field of information technology who masters and applies learning theories in the field of information technology to design, implement, and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of *Technological Pedagogical and Content Knowledge* (TPACK), and who possesses the character and values of Adab. For example: Profile 1: ICT Teacher in Primary/Lower Secondary/Upper Secondary/Vocational Schools Profile 2: IT Consultant Profile 3: Education Instructor Profile 4: MGMP Facilitator
2	Early-career researcher in the field of information technology	Early-career researcher in the field of information technology who masters and applies basic research concepts and procedures by collecting, processing, analysing, and presenting data to formulate and solve problems, as well as make responsible decisions in the field of information technology For example: Profile 1: Data Analyst Profile 2: Network Security Analyst Profile 3: Artificial Intelligence Analyst
3	*Technopreneur*	A *technopreneur* capable of designing, creating, implementing and developing projects by identifying resources, requirements, assumptions and constraints to determine project budgets and business returns, as well as creating employment opportunities in the field of information technology For example: Profile 1: Content Creator Profile 2: Digital Media Developer Profile 3: Application and Software Developer Profile 4: Computer Network Practitioner

The correlation between Graduate Profiles (Table 4.1) and Programme Educational Objectives (Table 2.1) is presented in Table 4.2 below

Table 4.2 Table of correlation between graduate profiles and programme educational objectives

No	Graduate Profile (GP)	Programme Educational Objectives (PEO)		
		EEO-1	EPO-2	EPO-3
1	PL-1	√		
2	PL-2		√	
3	PL-3			√

3.2 Formulation of PLO

A PLO is a more specific statement describing what a student is expected to know and be able to do upon graduation. It relates to the skills, knowledge and behaviour acquired by students during their studies through this programme.

The PLO can be derived/reformulated into a PLO that complies with the guidelines of international accreditation bodies as shown in Table 4.3 below:

Table 4.3 Programme-Specific Graduate Learning Outcomes

Code	Description of Graduate Learning Outcomes (PLO)
PLO-1	Demonstrates character and conduct that reflect adaptability, enthusiasm and integrity as an expression of devotion to God Almighty
LLO-2	Mastering theoretical concepts of learning in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving strategies.
PLO-3	Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of *Technological Pedagogical Content Knowledge* (TPACK)
PLO-4	Possesses a thorough understanding of theoretical concepts in the field of information technology, and is able to formulate procedural problem-solving strategies.
PLO-5	Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.
PLO-6	Able to design and produce scientific work to solve problems and adapt to change in a reflective manner
PLO-7	Evaluate and integrate concepts of religion, nationality, the constitution, language, and technology-based entrepreneurship with the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and practice
PLO-8	Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions independently and in groups through collaboration in the field of information technology.
PLO-9	Demonstrates responsibility in the field of information technology and its learning, through effective communication in group work
PLO-10	Able to develop multimedia learning materials in the field of information technology education creatively and professionally
PLO-11	Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements.

Note:

1. Use the codes for PLOs written sequentially with "PLO-"
2. In Ministry of Education, Culture, Research and Technology Regulation No. 53 of 2023, PLO encompasses competencies comprising:
   a. mastery of science and technology, specific skills and their application to one or a set of specific scientific fields;

b. general skills required as a foundation for the mastery of science and technology as well as relevant fields of work;
c. knowledge and skills required for the world of work and/or to continue studies at a higher level or to obtain a professional certificate; and
d. the intellectual ability to think independently and critically as a lifelong learner.

3. Each item in the PLO formulation must contain, at a minimum, the competencies that must be possessed and the subject matter that must be studied by students. Therefore, in formulating PLOs, a needs analysis must be conducted to identify the competencies required by stakeholders, and studies of *the body of knowledge* within the discipline of the study programme are required to determine the subject matter to be studied by students.
4. It is recommended that PLO statements include the competencies required in the era of Industry 4.0 towards Society 5.0 and 21st-century skills, including competencies regarding:
   a) Data literacy: the ability to understand, read, analyse and use data and information (*big data*) in the digital world;
   b) Technological literacy: the ability to understand how machines and technological applications work, including coding, *artificial intelligence*, and *engineering principles*;
   c) Humanities literacy: the ability to understand the humanities, communication, and design;
   d) Other 21st-century skills that foster *high-order* thinking *skills* (HOTS), which include *communication*, *collaboration*, *critical thinking*, *creative thinking*, *computational logic*, *compassion*, and *civic responsibility*.
   e) Understanding the Industry 4.0 era leading towards Society 5.0 and understanding its development.
   f) Understanding of science: applying knowledge for the common good at local, national, and global levels.
   g) Other issues related to *sustainability*, *global citizenship*, and an educational approach that is more inclusive, adaptive, and personalised.
   h) Learning outcomes and additional competencies that can be achieved outside the degree programme through the Programme for Fulfilling Study Load Outside the Degree Programme.
5. The formulation of PLOs must refer to the KKNI qualification levels and be in accordance with the four areas of competency coverage set out in Ministry of Education, Culture, Research and Technology Regulation No. 53 of 2023, Articles 7 to 9.
6. The formulated PLOs must be clear, observable, measurable and achievable within the learning process, as well as demonstrable and assessable. The formulation of good PLOs can be guided by answers to the following diagnostic questions:
   - Does the formulated PLO cover the following aspects:

a. mastery of science and technology, specific skills and their application to one or a set of specific scientific fields;
b. general competencies required as a foundation for the mastery of science and technology as well as relevant fields of work;
c. the knowledge and skills required for the world of work and/or for further study at a higher level or to obtain a professional certificate; and
d. the intellectual capacity to think independently and critically as a lifelong learner.

- Is the formulated PLO based on the KKNI levels?
- Do the formulated PLOs incorporate the vision and mission of the higher education institution, the faculty, and the academic vision of the study programme?
- Are the PLOs formulated based on the graduate profile?
- Is the graduate profile aligned with the needs of the workplace or stakeholders?
- Can the PLOs be achieved and measured in student learning, and how can they be achieved and measured?
- Can the PLOs be reviewed and evaluated on a regular basis?
- How can PLOs be translated into graduates' 'actual competencies'—encompassing attitudes, knowledge and skills that can be measured and achieved within course modules?
- Has the PLO been developed with due regard to the curriculum of similar study programmes and/or the relevant academic associations or societies?

Table 4.4. Alignment of PLO with the KKNI

KKNI Level for Bachelor's Degree Programmes	PLO Description										
	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6	PLO-7	PLO-8	PLO-9	PLO-10	PLO-11
S-a	√										
S-b	√										
S-c	√									√	
S-d	√									√	
S-e	√									√	
S-f	√										
PP		√		√			√				
Family Card			√		√	√				√	√
KTJ-1								√			
KTJ-2									√		

3.3 Matrix of the relationship between PLO and Graduate Profile

Table 4.5. Matrix of the Relationship between Programme Profile and PLO

Code	Description of Programme PLO	PL1	PL2	PL3
PLO-1	Demonstrating character and conduct that reflect adaptability, enthusiasm and integrity as an expression of devotion to God Almighty	√	√	√
PLO-2	Mastering theoretical concepts of learning in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving strategies.	V		
PLO-3	Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of *Technological Pedagogical Content Knowledge* (TPCK)	√		
PLO-4	Possesses a deep understanding of theoretical concepts in the field of information technology, and is able to formulate procedural problem-solving strategies.	√	√	√
PLO-5	Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.	√	√	√
PLO-6	Able to design and produce scientific work to solve problems and adapt to change in a reflective manner		√	
PLO-7	Evaluate and integrate concepts of religion, nationalism, the constitution, language, and technology-based entrepreneurship with the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and			√

Code	Description of Programme PLO	PL1	PL2	PL3
	practice			
PLO-8	Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions independently and in groups through collaboration ( ) in the field of information technology.	√	√	√
PLO-9	Demonstrates responsibility in the field of information technology and its learning, through effective communication within group work	√	√	√
PLO-10	Able to develop multimedia learning resources in the field of information technology education in a creative and professional manner	√	√	√
PLO-11	Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements.	√	√	√

Note: The PLO code may be written as PLO-1, PLO-2, etc.

Table 4.5 is used to ensure that the Profile can be achieved through graduate competencies (PLO)

3.4 Matrix of the relationship between the Programme's PLOs and the Programme's Educational Objectives/PEO

Table 4.6. Matrix of the relationship between Programme Study PLOs and Programme Study Educational Objectives

Code	Description of Programme PLO	PEO-1	PEO-2	PEO-3
PLO-1	Demonstrating character and conduct that reflect adaptability, enthusiasm and integrity as an expression of devotion to God Almighty	√	√	√
PLO-2	Mastering theoretical concepts of learning in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving strategies.	V		
PLO-3	Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of *Technological Pedagogical Content Knowledge* (TPCK)	√		
PLO-4	Possesses a deep understanding of theoretical concepts in the field of information technology, and is able to formulate procedural problem-solving strategies.	√	√	√
PLO-5	Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.	√	√	√
PLO-6	Able to design and produce scientific work to solve problems and adapt to change in a reflective manner		√	
PLO-7	Evaluate and integrate concepts of religion, nationalism, the constitution, language, and technology-based entrepreneurship with the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and practice			√
PLO-8	Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions independently and in groups through collaboration in the field of information technology.	√	√	√

Code	Description of Programme PLO	PEO-1	PEO-2	PEO-3
PLO-9	Demonstrates responsibility in the field of information technology and its learning, through effective communication within group work	√	√	√
PLO-10	Able to develop multimedia learning resources in the field of information technology education ( ) in a creative and professional manner	√	√	√
PLO-11	Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements.	√	√	√

4. Determination of Study Materials

4.1 *Body of Knowledge* (BoK)

Each PLO item within the programme contains subject matter that will be used to form courses. This subject matter may consist of one or more branches of science along with their sub-branches, or a body of knowledge that has been integrated into a new body of knowledge agreed upon by a forum of similar programmes as a characteristic of the programme's field of study. This subject matter is subsequently broken down into more detailed learning materials. The breadth and depth of the learning materials refer to the PLOs listed in Article 9 of the Education Quality Standards (Ministry of Education, Culture, Research and Technology Regulation No. 53 of 2023).

Table 5.1. Level of Depth and Breadth of Learning Materials

No	Programme Graduates	Minimum Level of Depth and Breadth of Material
1	Bachel or's Degree	Minimum: 1. Mastery of the theoretical concepts of a specific field of knowledge and skills, both in general and in specific contexts, to solve problems procedurally in accordance with the scope of their work; and 2. Ability to adapt to the changing situations faced by the Programme
2	Profession	Minimum: 1. Mastering the application of theories in a specific field of knowledge and skills by utilising science and technology within a specific professional field; and 2. Able to manage resources, apply professional standards, evaluate, and develop organisational strategies;
3	Master's	At a minimum, mastery of the theory of a specific field of knowledge to advance science and technology through research or the creation of innovative works.

Study materials may be obtained from:

1. *Benchmarking* against similar study programmes at overseas universities recognised for their excellence
2. Academic associations

3. Associations of similar study programmes and professional associations in Indonesia

Table 5.2. Study Materials Based on Programme-Specific Learning Outcomes

PLO	Description of Programme PLO	Study Materials
PLO-1	Demonstrates character and conduct that reflect adaptability, enthusiasm and integrity as an expression of piety towards God the Almighty	BK 1.1 Islam BK 1.2 Christianity BK 1.3 Catholicism BK 1.4 Buddhism BK 1.5 Hinduism BK 1.6 Confucianism BK 1.7 Pancasila Education BK 1.8 Civics BK 1.9 Indonesian BK 1.10 English BK 1.11 PGRI Studies BK 1.12 Community Service
PLO-2	Mastering the theoretical concepts of learning in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving strategies.	BK 2.1 Learning Theory and Fundamentals of Digital Pedagogy BK 2.2 *Higher Order Thinking Skills* (HOTs)-Based Learning BK 2.3 ICT Learning Planning Based on Pedagogy BK 2.4 Implementation of Responsive and Innovative ICT-Based Learning BK 2.5 Procedure-Based Learning Evaluation and Pedagogical Reflection BK 2.6 Formulation of Procedural Problem-Solving in ICT Learning BK 2.7 Learning Theories Supporting the Development of HOTs BK 2.8 21st Century Learning Strategies BK 2.9 Differentiation and Learning Styles BK 2.10 Integration of ICT in Learning Theory
PLO-3	Able to design, implement, evaluate and follow up on learning in the field of information technology and develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of *Technological Pedagogical Content Knowledge* (TPCK)	BK 3.1 Concepts of HOTs and TPCK in ICT Learning BK 3.2 Designing ICT Learning Materials BK 3.3 Implementation of Project-Based Learning & HOTs BK 3.4 Assessment and Evaluation of HOTS Learning BK 3.5 Follow-up and Improvement of Learning

PLO	Description of Programme PLO	Study Materials
PLO-4	Demonstrates a thorough understanding of theoretical concepts in the field of information technology, and is able to formulate procedural problem-solving strategies.	BK 4.1 Identification of Problems in the Technological Environment BK 4.2 Theoretical and Technological Literature Review BK 4.3 System and Problem Analysis BK 4.4 Design of Technological Solutions BK 4.5 Simulation and Modelling of Solutions BK 4.6 Documentation of Solution Design
PLO-5	Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.	BK 5.1 Real-world Context of ICT Application BK 5.2 Simulation of Information System Utilisation BK 5.3 Development of Simple Application Solutions BK 5.4 System Evaluation and Testing BK 5.5 Application of ICT Professional Standards BK 5.6 Mini Implementation Project
PLO-6	Able to design and produce academic work to solve problems and adapt to change in a reflective manner	BK 6.1 Research and Development BK 6.2 Proposal Seminar
PLO-7	Evaluate and integrate concepts of religion, nationality, the constitution, language, and technology-based entrepreneurship with the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and practice	BK 7.1 Mindset and Role of the Technopreneur BK 7.2 Identifying Technology-Based Business Opportunities BK 7.3 Initial Design of Digital Products BK 7.4 Initial Validation of Product Ideas BK 7.5 Preparation of a Pitch Deck BK 7.6 Case Studies in Technopreneurship in Indonesia
PLO-8	Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions independently and in groups through collaboration in the field of information technology.	BK 8.1 Introduction to Technology-Based Decision Making BK 8.2 Information and Data Analysis for ICT Business BK 8.3 Decision-Making Techniques BK 8.4 Tools to Support Technology Business Decisions BK 8.5 Digital Business Strategy BK 8.6 Risk & Uncertainty Management BK 8.7 Legality and the Impact of Technology Decisions
PLO-9	Demonstrates responsibility in the field of information technology and its learning, through effective communication within group work	BK 9.1 Professionalism in the ICT Sector BK 9.2 Ethics and Morality in Technology BK 9.3 Code of Ethics for the Information Technology Profession BK 9.4 Security, Privacy, and Social Responsibility BK 9.5 Technology Regulation and Law in Indonesia

PLO	Description of Programme PLO	Study Materials
		BK 9.6 Ethics of AI and Automated Algorithm Use BK 9.7 Leadership and Organisational Ethics BK 9.8 English for Information Technology
PLO-10	Ability to develop multimedia learning materials in the field of information technology education creatively and professionally	BK 10.1 Designing learning media BK 10.2 Creative Multimedia Research BK 10.3 Multimedia Project Proposal BK 10.4 Visual Direction *(Storyline)* BK 10.5 Visual Assets (Graphic Design, Animation, Graphic Video) BK 10.6 Integration of all multimedia components relating to audio and visuals
PLO-11	Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements specifications.	BK 11.1 Programme Specifications BK 11.2 Writing Code in Accordance with Guidelines and Best Practices BK 11.3 Structured Programming BK 11.4 Object-Oriented Programming BK 11.5 *Libraries* or *Pre-existing* Components BK 11.6 Database Access BK 11.7 Programme Code Documentation BK 11.8 Debugging BK 11.9 Unit Testing BK 11.10 Operating Systems BK 11.11 Computer Network Management

4.2 Description of Study Materials

Table 5.3. Course Content (BK)

No/Code	Course Content (BK)	Course Material Description
RM-1.1	Islam	1. Humanity and Religion 2. The concepts of faith, Islam and ihsan in shaping the perfect human being 3. Concepts of ethics, morals and character (anti-corruption, anti-bullying, anti-intolerance, anti-sexual violence, anti-drugs) 4. Grounding Islam in Indonesia 5. Islam fosters unity amidst diversity 6. Islam and the challenges of modernisation 7. Islam's contribution to the development of world civilisation 8. Democracy and human rights from an Islamic perspective 9. Islamic Politics and Law
BK-1.2	Christianity	1. God the Creator: Creating, saving and accompanying. 2. Human beings, God's creation: Created in the image and likeness of the Creator. 3. Christian Ethics, Morals and Character: Against sexual harassment. 4. Human Rights and Responsibilities.

No/Code	Course Content (BK)	Course Material Description
		5. Faith, Knowledge and Service. 6. Christianity and Culture. 7. Interfaith Harmony: Building Tolerance. 8. Diversity as a Reality. 9. Human Rights: Humanising Humanity: Anti-Bullying. 10. Democracy. 11. Work as a Mandate from God: Anti-Corruption. 12. The Relationship Between Religion and the State According to Christianity. 13. The Law of Love: The foundation of Christian life in all aspects of life.
BK-1.3	Catholicism	1. Who is man according to the Bible? 2. Reasoning, exploring arguments, understanding and the nature of humanity as the image of God. 3. Communicating the calling and mission of humanity as the image of God. 4. Exploring the relationship of human beings with themselves, others, the environment and God. 5. Communicating the relationship between human beings and themselves, their fellow human beings, the environment and God. 6. Religion as the means to perfect our understanding of the macrocosm and the microcosm. 7. The lived experience of religious life within the Catholic Church. 8. The meaning of religious pluralism. 9. Interfaith cooperation for the development of the whole person. 10. A personal encounter with Jesus in the Bible. 11. The meaning of the Passion, death and resurrection of Jesus Christ. 12. The Meaning of the Trinity. 13. The nature and mission of the Catholic Church for the preservation of life. 14. Living out faith in a pluralistic society. 15. Faith for the creation of Pancasila-based builders.
BK-1.4	Hinduism	1. A study of the concept of śraddhā in the Vedas, Upaniṣads, and Bhagavad Gītā; typologies of faith (trividha śraddhā in Gītā 17:2–3); the function of śraddhā in the spiritual growth of Hindus; strengthening faith through the practice of yajña, tapa, and dharma. 2. Contemporary issues such as materialism, secularism, and popular spirituality; the Hindu approach to immanent-transcendent Divinity (Brahman and Īśvara); the relevance of mokṣa, ātman, and bhakti yoga in addressing modern spiritual needs. 3. Hindu perspectives on ātman, saṁsāra, karma, and mokṣa; the dignity of humanity as dharmic beings capable of attaining the highest consciousness; the relevance of these teachings in addressing the modern search for the meaning of life.

No/Code	Course Content (BK)	Course Material Description
		4. The teachings of dāna, seva, ahimsa, and kṣānti; the role of Hindus in social development and education; tangible contributions to economic development and national values in the spirit of dharma yuddha. 5. Historical studies of the role of Hindus in the states and kingdoms of the Nusantara; the principles of pañca yadnya and rājadharma in state governance; the contribution of Hindu values to the ethics of governance, law, and the culture of the Nusantara. 6. The ethics of dāna and yajña as forms of social responsibility; the concept of lokasaṁgraha in the Bhagavad Gītā (3:20–25); tax awareness as seva for the state; the value of patriotism in the practice of karma yoga among Indonesian Hindus. 7. Teachings on gender equality in the Vedas and the Mahābhārata (e.g. the stories of Sulabhā and Draupadī); the principle of non-violence (ahiṁsā) in social relations; the contribution of Hindus to social movements and dharma-based democracy. 8. Teachings on tolerance in the Vedas: ekaṁ sat viprā bahudhā vadanti; interfaith dialogue in the Upaniṣads and the Gītā; the history of Hindu pluralism in India and the Archipelago; the principles of madhyama mārga and sarva dharma sambhava in the practice of religious moderation. 9. Strategies for interfaith education and dharmic dialogue; forums for harmony based on the values of ṛta and satya; case studies of Hindu tolerance in Bali and Java; analysis of religious freedom according to the 1945 Constitution and the inclusive stance of Hindu teachings."
BK-1.5	Buddhism	1. A study of the concept of sāddha in the suttas (e.g., Sāleyyaka Sutta, Kalama Sutta), the typology of saddhā (buttika, ākāra, bala), the function of saddhā in the spiritual life of Buddhists, and the strengthening of faith through practice. 2. Contemporary issues such as secularism, spiritual crisis, and pluralism; the Buddhist approach to the concept of Divinity (without a creator), the relevance of nibbāna and brahmavihāra in addressing contemporary spiritual needs. 3. Buddhist perspectives on anattā, dukkha, paṭiccasamuppāda, and nibbāna; the dignity of human beings as moral beings with the potential for enlightenment; the relevance of these teachings in addressing the questions of modern life. 4. Teachings on dāna, sīla, karuṇā, mettā, and samacariya; the role of the Buddhist community in social, economic, and educational development; Buddhist contributions to national values and public cooperation. 5. Historical studies of the role of Buddhists in the state; the principles of pañca-sīla and dasavidha-rājadhamma; the contribution of Buddhist values in fostering social justice, the rule of law, and a culture of compassion.

No/Code	Course Content (BK)	Course Material Description
		6. The ethics of dāna as the basis for public contribution; the teaching of lokasangraha (worldly maintenance); tax awareness as a form of secular dāna; the value of nationalism in Indonesian Buddhism. 7. Teachings on gender equality in the suttas (e.g. Therīgāthā, Sutta Nipāta); the principle of non-violence (ahiṃsā); lay participation in social movements and the strengthening of democracy based on Buddhist values. 8. Suttas on tolerance and dialogue (e.g. Kalama Sutta, Cūḷekasāla Sutta); the history of Buddhist pluralism in India and Southeast Asia; the concept of majjhima paṭipadā as the basis for religious moderation. 9. Interfaith education strategies; interfaith dialogue forums based on mettā-karuṇā; case studies of religious pluralism; legal analysis of religious freedom in the context of Indonesia and Buddhism.
BK-1.6	Confucianism	1. Study of the concept of xin (faith) in the Analects, the Doctrine of the Mean, and the Mencius; typology of xin in relation to zhong, shu, and cheng (sincerity); the function of faith in the moral and spiritual lives of the faithful; strengthening of faith through the daily practices of li and xiu shen. 2. Contemporary issues such as hedonism, the ethical crisis, and secularism; the Confucian view of Tian (Heaven) as the source of moral order; the relevance of dao, ren, and ming in addressing the spiritual void of the modern age. 3. The Confucian view of human nature (xing) as inherently good; the value of the junzi as humanity's noble potential; the interconnection between moral cultivation (xiu shen) and social harmony; the application of these teachings to address contemporary existential questions. 4. The teachings of ren, yi, li, zhong, shu, and xin in social life; moral obligations towards family and state; the tangible contributions of Confucians in the social, educational, and national spheres; the practices of gong (co-operation) and xiao (filial piety) in fostering harmony. 5. Historical study of the role of Confucian communities within the state; moral practices based on da xue (great learning) and zhong yong (balance); the contribution of the value of he (harmony) in realising a compassionate legal system and social culture. 6. The concept of li as a civil order and public ethics; the value of dāna in social forms through gongde (collective virtue); taxation as a civic duty to ensure national harmony; patriotism as an expression of zhong (loyalty) towards the state. 7. The doctrine of equality in classical Confucianism (e.g., Ren applies universally); the spirit of non-violence and wen (civilisation); the role of Confucian figures in education and social reform; the contribution of the faithful in strengthening democratic values.

No/Code	Course Content (BK)	Course Material Description
		8. The attitude of tolerance in the Zhong Yong and Lun Yu; the principle of he er bu tong (harmony without uniformity); the history of Confucian pluralism in East Asia and Southeast Asia; the practice of zhong-shu as the basis for interfaith dialogue and religious moderation. 9. Interfaith education strategies based on the values of Ren and Yi; the development of interfaith and humanitarian forums; case studies on the role of Confucian figures in religious harmony; analysis of constitutions and guarantees of religious freedom within the context of Confucian values.
BK-1.7	Pancasila Education	1. The history and objectives of Pancasila Education; 2. Pancasila as the national identity; 3. Pancasila in the context of the 1945 Constitution; 4. Pancasila as the foundation of the state; 5. Pancasila as the ideology of the nation and state; 6. Pancasila as a philosophical system; 7. Pancasila and state policy; 8. Pancasila as an ethical system; 9. The actualisation of Pancasila values in the 5A campaign: Anti-Corruption, Anti-Intolerance, Anti-Bullying, Anti-Sexual Violence, and Anti-Drugs; 10. The correlation between the state law of "Pancasila" and religious law; 11. Pancasila as the foundation for the development of science; 12. Pancasila as a paradigm of science; 13. Pancasila as a paradigm for national life.
BK-1.8	Civic Education	1. Introduction to Citizenship Education; 2. The Development and Implementation of the Indonesian State; 3. Indonesian Democracy; 4. Indonesian National Identity and Anti-Intolerance; 5. Indonesian Citizenship; 6. Human Rights (HR), Anti-Bullying and Anti-Sexual Violence; 7. Judicial Violations and the Enforcement of Human Rights; 8. National Resilience; 9. National Strategic Policy; 10. Archipelagic Outlook; 11. Implementation of the Archipelagic Concept in National Life; 12. Methods for Measuring Indonesia's Territorial Waters and Airspace; 13. Regional Autonomy, Anti-Corruption and Anti-Narcotics.
BK-1.9	Indonesian	1. The nature of Indonesian as the language of unity and the national language; 2. Exploring texts in academic life (instilling values and the nature of the Indonesian language as a vehicle for knowledge); 3. Exploring the world of libraries;

No/Code	Course Content (BK)	Course Material Description
		4. Designing research proposals and activity proposals; 5. Reporting research findings and activity outcomes; 6. Expressing oneself in academic articles.
BK-1.10	English	1. Simple Present Tense 2. Present Continuous Tense 3. Simple Past Tense 4. Present Perfect Tense 5. Simple Future Tense
BK-1.11	PGRI-ness	1. History and Dynamics of PGRI. 2. Characteristics and Identity of PGRI. 3. Profile of Pancasila Students. 4. The Role of PGRI in Improving the Quality of Human Resources. 5. PGRI Organisational Ethics. 6. PGRI and Social Media. 7. Challenges Facing PGRI in the Age of Disruption.
BK-1.12	Community Service	1. Digital Literacy 2. Inclusive and Exclusive Leadership 3. National Perspective; 4. Talent Development; 5. Entrepreneurship; 6. Problem Solving in the Community; 7. Non-Formal Education; 8. Public Speaking; 9. Journalism.
BK 2.1	Learning Theories and the Fundamentals of Digital Pedagogy	Learning theories: Behaviourist, Cognitive, Constructivist, Connectivist; The relevance of learning theories in the design of ICT-based learning; Digital learning models appropriate to each theoretical approach; The TPACK framework and the role of pedagogy in digital education.
BK 2.2	Learning Based on *Higher Order Thinking Skills* (HOTs)	Revised Bloom's Taxonomy: Understanding HOTs levels (analysis, evaluation, creation); HOTs learning strategies and models: *problem-based*, *inquiry-based*, *project-based*; Designing ICT learning activities that stimulate higher-order thinking; Assessment of HOTs through authentic assessment (portfolios, analytical rubrics, digital products).
BK 2.3	ICT Learning Planning Based on Pedagogy	Development of teaching materials: syllabus, lesson plans, digital modules based on HOTs; Development of learning objectives based on outcomes and HOTs; Integration of media and technology within a pedagogical context;

No/Code	Course Content (BK)	Course Material Description
		Adapting learning for various levels (primary, lower secondary, upper secondary, non-formal).
BK 2.4	Implementation of Responsive and Innovative ICT-based Learning	Teaching strategies based on digital literacy and collaboration; Differentiated learning: learning styles, special needs, personalisation; Use of LMS and digital applications for active learning; Microteaching practice: integration of pedagogy and technology.
BK 2.5	Procedure-Based Learning Evaluation and Pedagogical Reflection	Assessment techniques: formative, summative, and diagnostic in ICT; Measuring Higher-Order Thinking Skills (HOTS) using a procedural approach; Analysis of learning outcomes and follow-up (remedial & enrichment); Pedagogical reflection: how teachers learn from their teaching practice.
BK 2.6	Formulation of Procedural Problem-Solving in ICT Learning	Identification of ICT learning issues in the field; Pedagogy-based procedural problem-solving techniques (e.g. using the ADDIE approach or *lesson study*); Case studies: analysing learning failures and their reformulation; Developing data-driven solutions and learning reflections.
BK 2.7	Learning Theories Supporting the Development of Higher-Order Thinking Skills	Meaningful learning and higher-order thinking; *Inquiry-based learning* and *problem-based learning* approaches; The role of digital media in stimulating analysis, evaluation and creation; Integration of HOTs into the ICT curriculum.
BK 2.8	21st Century Learning Strategies	Adaptive and technology-literacy-based, The 4C Concepts: *Communication, Collaboration, Critical Thinking, Creativity*; Flexible learning: *blended, flipped classroom, and self-paced learning*; The role of the teacher as a facilitator of digital learning.
BK 2.9	Differentiation and Learning Styles	The theory of *multiple intelligences* and personalised learning; Differences in learning styles (visual, auditory, kinesthetic) in the context of *e-learning*; Adaptive learning design using technology; Case studies of adaptive learning platforms (e.g. Ruangguru, Khan Academy).
BK 2.10	Integration of ICT in Learning Theory	The role of technology as a support for learning theories; Concept map between learning theories and digital approaches; Analysis of the effectiveness of digital tools in line with theoretical approaches; Evaluation of the suitability of media to student characteristics.

No/Code	Course Content (BK)	Course Material Description
BK 3.1	HOTs and TPACK concepts in ICT learning	TPACK components: Technology, Pedagogy, Content and their integration; Differences between TPACK and conventional ICT and general learning; The role of TPACK in supporting 21st-century educational transformation; Representation of TPACK in the curriculum, lesson plans and learning activities.
BK 3.2	Designing ICT Learning Materials	Analysis of the needs and characteristics of digital native learners; Formulation of learning objectives with HOTs dimensions (Bloom Revised); Development of learning objective sequences (LOS) and initial assessment; Integrative strategies: PjBL, Inquiry-Based Learning, STEAM; Use of technology-based learning media and resources (Simulation, Coding, AR/VR, AI-based tools).
BK 3.3	Implementation of Project-Based Learning & HOTs	Learning implementation models: *blended, flipped, hybrid*; Project/problem-based and collaborative teaching techniques; Integration of digital tools for collaboration and exploration (Google Workspace, Canva Edu, Scratch, Replit, etc.); Simulation of implementation in the classroom and in the community/PKBM; Adaptation for inclusion, differentiation and learner diversity.
BK 3.4	Assessment and Evaluation of Higher-Order Thinking Skills (HOTS)	Designing HOTS assessment rubrics: analytical, holistic, authentic; Technology-based formative and summative assessment techniques; Digital portfolios as tools for reflection and process evaluation; Use of Learning Analytics (student data *dashboard*); Teacher reflection based on assessment data (*lesson study*, *peer review*).
BK 3.5	Follow-up and Improvement of Learning	Post-learning reflection based on reflective practice; Development of lesson plan improvements based on assessment results; Action research for improving ICT learning; The role of ICT teacher learning communities (MGMP, digital communities); Continuous professional development (CPD) and technology *updates*.
BK 4.1	Identification of Problems in the Technological Environment	Analysis of user needs and real-world problems in educational, social, or organisational contexts; Observation, interview and document analysis techniques; Formulating technology-related problems in a measurable and targeted manner.

No/Code	Course Content (BK)	Course Material Description
BK 4.2	Theoretical and Technological Literature Review	Application of ICT theories (information systems, programming, data management, etc.) to map out solutions; Literature review to support the selection of technical approaches; Establishing a theoretical framework as the foundation for solutions.
BK 4.3	System and Problem Analysis	Requirements analysis techniques (*Use Case*, *Stakeholder Mapping*); Context diagrams and Data Flow Diagrams (DFD); Mapping problems in the form of system logic; Case study of simple system analysis.
BK 4.4	Technology Solution Design	Principles of user-centric solution design; Solution design techniques (*mock-ups*, *wireframes*, *flowcharts*, basic UML); Integration between system design (UI) and user experience (UX) approaches;
BK 4.5	Simulation and Modelling of Solutions	Creation of non-functional prototypes based on scenarios; Mapping out system usage flows (*user journey*); Simulation of solution processes using visual tools (draw.io, Figma, Miro).
BK 4.6	Solution Design Documentation	Writing of system analysis and design documents; Detailing of functional and non-functional requirements; Preparation of technology-based solution proposal documents.
BK 5.1	Real-world Context of ICT Application	Scope and fields of ICT application (education, business, administration, social); Identification of real-world problems that can be solved using ICT; Mapping of user needs and the working environment; Case study: ICT integration in educational institutions or government agencies.
BK 5.2	Simulation of Information System Utilisation	Use of simple information systems for educational or organisational purposes; Management of academic data, inventory, attendance, and *e-office*; Implementation of LMS, CMS, and similar applications (Moodle, Google Workspace, WordPress); Advanced spreadsheet practice (dashboards, visualisation, data logic).
BK 5.3	Development of Simple Application Solutions	Application design based on field requirements; Basic web or lightweight mobile programming; Rapid prototyping tools (Thunkable, Glide, MIT App Inventor, or Google Apps Script); Practical experience in *no-code/low-code* application development.
BK 5.4	System Evaluation and Testing	Planning of system testing and functional validation; Testing based on checklists and use case scenarios; Documentation of test results and user feedback;

No/Code	Course Content (BK)	Course Material Description
		Iterative improvements based on test results.
BK 5.5	Application of ICT Professional Standards	Introduction to industry standards such as ISO 9126, ITIL, COBIT (introduction); Professional ethics when developing solutions for third parties; Professional writing of technology project reports; Technical documentation and *user manuals*.
BK 5.6	Mini Implementation Project	Simulation of an ICT implementation project based on real-world case studies; Cross-functional team collaboration (design, data, *user testing*); Presentation of implementation results at a class forum/mini symposium; Assessment based on performance, process, and the usefulness of the solution.
BK 6.1	Research and Development	Providing students with opportunities to practise conducting research and development through assignments or projects; Optimising the use of computers and other digital tools to collect, analyse, process data, and produce reports in the form of a dissertation; The implementation of research and development includes problem-solving, surveys, experiments, and observation.
BK 6.2	Research Proposal Seminar	Drafting a research proposal in the field of Information Technology Education and its applications based on the results of problem identification using appropriate research methods.
BK 7.1	Mindset and the Role of Technopreneurs	Definition of a technopreneur and its importance in digital transformation; Characteristics of creative, opportunistic, and disruptive thinking in technology-based ventures; Case studies of inspirational *technopreneurs* (local and global).
BK 7.2	Identifying Technology-Based Business Opportunities	Analysis of technology trends and social issues as opportunities; Techniques for observing market and societal needs based on technology; Study of market research tools: Google Trends, Ubersuggest, LinkedIn Insights.
BK 7.3	Initial Design of Digital Products	Digital product concepts from the perspective of ideas and user needs; Design of mock-ups, concept sketches, or interaction flows (without coding); Study of *user journey* approaches and *pain point mapping*.
BK 7.4	Initial Product Idea Validation	Early validation techniques (questionnaires, user interviews, lightweight prototypes); Application of *problem-solution fit*; Initial *feedback loop* before the MVP is created.

No/Code	Course Content (BK)	Course Material Description
BK 7.5	Pitch Deck Preparation	Pitch deck structure for investors or academic audiences; Visualisation of the idea, product value, and market potential; Simulation of the *pitch* delivery: style, duration, and logical flow.
BK 7.6	Case Studies in Technopreneurship in Indonesia	Lessons from early-stage digital start-ups; The ideation, validation, and communication processes they have undertaken; Critical reflection and recommendations for local innovation.
BK 8.1	Introduction to Technology-Based Decision Making	Definitions and basic processes of decision-making; Types of decisions in digital business (strategic, operational, technical); The role of data and information in the decision-making process; Case studies: successful/failed technology-based decisions.
BK 8.2	Information and Data Analysis for ICT Business	Identification and collection of data from internal and external sources; Data processing using simple *tools* (Excel, Google Data Studio); Basic data visualisation techniques to support decision-making; Digital business dashboards and reports.
BK 8.3	Decision-Making Techniques	Decision-making based on rationality and intuition; SWOT analysis, risk analysis, and *cost-benefit analysis*; Multi-criteria decision-making (MCDM) methods; A/B testing in digital decision-making.
BK 8.4	Business Decision Support Tools	Google Analytics, Looker Studio, and simple analytics tools; ERP, CRM, and decision support systems (DSS); Business Intelligence (BI) *tools* for *start-ups*; The use of AI or *chatbots* in *assistive decision-making.*
BK 8.5	Digital Business Strategy	Growth and development strategies for IT businesses. Competitor analysis and product positioning. Monetisation of digital products: freemium, subscription, advertising, SaaS. Case studies: strategic decisions for digital start-ups.
BK 8.6	Risk & Uncertainty Management	Identifying risks in technology business development. Risk mitigation and response strategies. Scenario analysis and decision simulation. Case studies on digital product risks (*security, scaling, user loss*).
BK 8.7	Legality and the Impact of Technology Decisions	Legal consequences of data-driven business decisions. Customer data protection in the decision-making process. Transparency and fairness in algorithm-based decisions. Ethical considerations in automated decision-making (AI/ML).

No/Code	Course Content (BK)	Course Material Description
BK 9.1	Professionalism in the ICT Sector	Definitions and standards of professionalism in the technology sector; Work competencies, work ethics, and *soft skills* in the ICT industry; Professional responsibility towards work outcomes and technology users; Case studies on professional conduct in system/application development.
BK 9.2	Ethics and Morality in Technology	General ethical concepts versus professional ethics in ICT; Ethical principles: honesty, justice, social responsibility; Ethical dilemmas in technology development (AI, algorithms, *big data*); Case studies on ethics in programming and system use.
BK 9.3	Code of Ethics for the Information Technology Profession	The ACM, IEEE, and similar organisations' codes of ethics; National professional codes of ethics in the ICT sector (APTIKOM, etc.); Interpretation and application of codes of ethics in the workplace; Breaches of the code of ethics and their legal implications.
BK 9.4	Security, Privacy, and Social Responsibility	Issues regarding the privacy of personal data in digital systems; Consumer and technology user protection; The role of ICT professionals in preventing data misuse; Social impacts of technology: digital inequality, addiction, surveillance.
BK 9.5	Technology Regulation and Law in Indonesia	The ITE Law (Information and Electronic Transactions); Personal Data Protection Act (PDP Act); Intellectual Property Rights (IPR) in the ICT sector; Legal case studies on the misuse of technology.
BK 9.6	Ethics of AI and Automated Algorithm Use	Algorithmic bias and digital discrimination; The influence of algorithms on user behaviour; Ethics of AI use in education, business, and security; *Tech fairness* and inclusive design.
BK 9.7	Leadership and Organisational Ethics	Ethical leadership in ICT teams; A work culture that upholds responsibility and integrity; Ethical conflict management in technology projects; The role of mentors and the reinforcement of work ethics in development teams.
BK 9.8	*English for Information Technology*	*IT Professions and Workplace Communication*; Reading and Writing Technical Texts; Project Presentation and Documentation; *Trends in Information Technology*

No/Code	Course Content (BK)	Course Material Description
BK 10.1	Designing learning materials	The process of creating or selecting tools and materials to be used in the learning process to help learners understand and master the subject matter.
BK 10.2	Creative Multimedia Research	The process of exploration and investigation used to generate new ideas, innovations, and creative solutions in the fields of design, production, and distribution of multimedia content.
BK 10.3	Multimedia Project Proposal	The process of preparing a written document detailing the plan, objectives, and implementation of a multimedia project.
BK 10.4	Visual Direction (*Storyline*)	Understanding of visual direction; Breaking it down into smaller, more specific components; Designing a process that enables these components to be realised.
BK 10.5	Visual Assets (Graphic Design, Animation, Motion Graphics)	Understanding of project requirements; Use of appropriate software; and Mastery of visual techniques to produce high-quality results.
BK 10.6	Integration of all multimedia components related to audio and visuals	The process of combining elements such as text, images, audio, video and animation into a coherent and engaging experience.
BK 11.1	Program Specifications	Mastery of programming language execution commands; Understanding of programme specifications.
BK 11.2	Writing Code in Accordance with *Guidelines* and *Best Practices*	Avoiding common errors and improving overall code quality.
BK 11.3	Structured Programming	An approach to building programmes by breaking them down into small, structured and easily understandable parts (procedures).
BK 11.4	Object-Oriented Programming	Breaking a program down into smaller parts called objects, each of which has its own data and functions, and can interact with one another.
BK 11.5	Libraries or Pre-existing Components	Useful for speeding up application development and learning programming concepts.
BK 11.6	Database Access	Choice of programming language, database type, and tools that can be used.
BK 11.7	Program Code Documentation	Helps other programmers understand the logic, functions, and usage of the code, particularly during maintenance, repairs, or further development.

No/Code	Course Content (BK)	Course Material Description
BK 11.8	Debugging	An essential skill that must be mastered to ensure the programme runs properly and produces the correct output.
BK 11.9	Unit Testing	The process of testing the smallest components of a program to ensure that they function correctly.
BK 11.10	Operating Systems	Basic concepts and uses of operating systems; The role of the operating system in a computer; How an operating system manages *resources* on hardware, particularly computers, such as memory, *storage* and I/O; How an operating system handles concurrency, manages processes and *threads*, scheduling, *input/output*, *file* management, and provides protection and security; Students learn by using the Windows and Linux operating systems, both when understanding concepts and when building related programmes.
BK 11.11	Computer Network Management	Basic Concepts of Server Operating Systems; Installation and Configuration of Server Operating Systems; *User* and *Permission* Management; Service and Process Management; *File Sharing* and *Remote Access*; *Web Server* and *Database Server*; *Mail Server* and DNS *Server*; *Backup* and *Recovery*; Virtualisation and *Containerisation* (Optional / Intermediate); Monitoring and *Logging*.

5. Course Design and Credit Weighting

Courses are structured based on the Learning Outcomes (LO) assigned to the course and the study materials corresponding to those LOs. Their structure may utilise the following matrix:

Table 6.1 Matrix of LOs and Course Content

LLO	Study Materials
LLO-1 Demonstrating character and manners that reflect adaptability, enthusiasm and integrity as a manifestation of piety towards God Almighty	BK 1.1 Islam BK 1.2 Christianity BK 1.3 Catholicism BK 1.4 Buddhism BK 1.5 Hinduism BK 1.6 Confucianism BK 1.7 Pancasila Education BK 1.8 Civics BK 1.9 Indonesian BK 1.10 English BK 1.11 PGRI Studies BK 1.12 Community Service
PLO-2 Mastering the theoretical concepts of learning in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving strategies.	BK 2.1 Learning Theory and Fundamentals of Digital Pedagogy BK 2.2 *Higher Order Thinking Skills* (HOTs)-Based Learning BK 2.3 ICT Learning Planning Based on Pedagogy BK 2.4 Implementation of Responsive and Innovative ICT-Based Learning BK 2.5 Procedure-Based Learning Evaluation and Pedagogical Reflection BK 2.6 Formulation of Procedural Problem-Solving in ICT Learning BK 2.7 Learning Theories Supporting the Development of HOTs BK 2.8 21st-Century Learning Strategies BK 2.9 Differentiation and Learning Styles BK 2.10 Integration of ICT in Learning Theory
PLO-3 Ability to design, implement, evaluate and follow up on learning in the field of information technology, as well as to develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of Technological Pedagogical Content Knowledge (TPCK)	BK 3.1 Concepts of HOTs and TPCK in ICT Learning BK 3.2 Designing ICT Learning Materials BK 3.3 Implementation of Project-Based Learning & HOTs BK 3.4 Assessment and Evaluation of HOTS Learning BK 3.5 Follow-up and Improvement of Learning
PLO-4 Demonstrates a thorough understanding of theoretical concepts in the field of information technology, and is able to formulate procedural problem-solving strategies.	BK 4.1 Identifying Problems in the Technological Environment BK 4.2 Theoretical and Technological Literature Review BK 4.3 System and Problem Analysis BK 4.4 Design of Technological Solutions BK 4.5 Simulation and Modelling of Solutions BK 4.6 Documentation of Solution Design
PLO-5 Able to apply knowledge of information and communication technology ( ) by utilising science and technology in problem-solving and able to adapt to the situations encountered.	BK 5.1 Real-world Context of ICT Application BK 5.2 Simulation of Information System Utilisation BK 5.3 Development of Simple Application Solutions BK 5.4 System Evaluation and Testing BK 5.5 Application of ICT Professional Standards

LLO	Study Materials
	BK 5.6 Mini Implementation Project
PLO-6 Able to design and produce academic work to solve problems and adapt to change in a reflective manner	BK 6.1 Research and Development BK 6.2 Proposal Seminar
PLO-7 Evaluate and integrate concepts of religion, nationality, the constitution, language, and technology-based entrepreneurship with the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and practice	BK 7.1 Mindset and Role of the Technopreneur BK 7.2 Identifying Technology-Based Business Opportunities BK 7.3 Initial Design of Digital Products BK 7.4 Initial Validation of Product Ideas BK 7.5 Preparation of a Pitch Deck BK 7.6 Case Studies in Technopreneurship in Indonesia
PLO-8 Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions independently and in groups through collaboration in the field of information technology.	BK 8.1 Introduction to Technology-Based Decision Making BK 8.2 Analysis of Information and Data for ICT Business BK 8.3 Decision-Making Techniques BK 8.4 Tools to Support Technology Business Decisions BK 8.5 Digital Business Strategy BK 8.6 Risk & Uncertainty Management BK 8.7 Legality and the Impact of Technology Decisions
PLO-9 Demonstrates responsibility in the field of information technology and its learning, through effective communication within group work	BK 9.1 Professionalism in the ICT Sector BK 9.2 Ethics and Morality in Technology BK 9.3 Code of Ethics for the Information Technology Profession BK 9.4 Security, Privacy, and Social Responsibility BK 9.5 Technology Regulation and Law in Indonesia BK 9.6 Ethics of AI and Automated Algorithm Use BK 9.7 Leadership and Organisational Ethics BK 9.8 English for Information Technology
PLO-10 Ability to develop multimedia learning materials in the field of information technology education creatively and professionally	BK 10.1 Designing learning media BK 10.2 Creative Multimedia Research BK 10.3 Multimedia Project Proposal BK 10.4 Visual Direction (Storyline) BK 10.5 Visual Assets (Graphic Design, Animation, Graphic Video) BK 10.6 Integration of all multimedia components relating to audio and visuals
PLO-11 Able to design, develop, and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements specifications.	BK 11.1 Programme Specifications BK 11.2 Writing Code in Accordance with Guidelines and Best Practices BK 11.3 Structured Programming BK 11.4 Object-Oriented Programming BK 11.5 Libraries or Pre-existing Components BK 11.6 Database Access BK 11.7 Programme Code Documentation BK 11.8 Debugging BK 11.9 Unit Testing BK 11.10 Operating Systems BK 11.11 Computer Network Management

Table 6.2 Determination of Course Codes through Study Materials in the PLO Descriptor

Study Materials	Elements in BK	Course Formation	Course Name
PLO 1.1 Islam	1. Humanity and Religion 2. The concepts of faith, Islam and ihsan in shaping the perfect human being 3. The concepts of ethics, morality and character (anti-corruption, anti-bullying, anti-intolerance, anti-sexual violence, anti-drugs) 4. Grounding Islam in Indonesia 5. Islam fosters unity amidst diversity 6. Islam and the challenges of modernisation 7. Islam's contribution to the development of world civilisation 8. Democracy and human rights from an Islamic perspective 9. Islamic Politics and Law	1.1	Islamic Religious Education
BK 1.2 Christianity	1. God the Creator: Creating, saving and accompanying. 2. Human beings, God's creation: Created in the image and likeness of the Creator. 3. Christian Ethics, Morals and Character: Against sexual harassment. 4. Human Rights and Responsibilities. 5. Faith, Knowledge and Service. 6. Christianity and Culture. 7. Interfaith Harmony: Building Tolerance. 8. Diversity as a Reality. 9. Human Rights: Humanising Humanity: Anti-Bullying. 10. Democracy. 11. Work as a Mandate from God: Anti-Corruption. 12. The Relationship Between Religion and the State According to Christianity. 13. The Law of Love: The foundation of Christian life in all aspects of life.	1.2	Christian Religious Education
BK 1.3 The Catholic Faith	1. Who is man according to the Bible? 2. Reasoning, exploring arguments, understanding and the nature of humanity as the image of God. 3. Communicating the calling and mission of humanity as the image of God. 4. Exploring the relationship of human beings with themselves, others, the environment and God. 5. Communicating the relationship of human beings with themselves, others, the environment and God. 6. Religion as the completion of the understanding of the macrocosm and microcosm.	1.3	Catholic Religious Education

Study Materials	Elements in BK	Course Formation	Course Name
	7. The lived experience of religious life within the Catholic Church. 8. The meaning of religious pluralism. 9. Interfaith cooperation for the development of the whole person. 10. A personal encounter with Jesus in the Bible. 11. The meaning of the Passion, death and resurrection of Jesus Christ. 12. The Meaning of the Trinity. 13. The nature and mission of the Catholic Church for the preservation of life. 14. Living out faith in a pluralistic society. 15. Faith for the creation of Pancasila-based builders of the nation.		
BK 1.4 Hinduism	1. Study of the concept of śraddhā in the Vedas, Upaniṣads, and Bhagavad Gītā; typology of belief (trividha śraddhā in Gītā 17:2–3); the function of śraddhā in the spiritual growth of Hindus; strengthening of belief through the practice of yajña, tapa, and dharma. 2. Contemporary issues such as materialism, secularism, and popular spirituality; the Hindu approach to immanent-transcendent Divinity (Brahman and Īśvara); the relevance of mokṣa, ātman, and bhakti yoga in addressing modern spiritual needs. 3. Hindu perspectives on ātman, saṁsāra, karma, and mokṣa; the dignity of humanity as dharmic beings capable of attaining the highest consciousness; the relevance of these teachings in addressing the modern search for the meaning of life. 4. The teachings of dāna, seva, ahimsa, and kṣānti; the role of Hindus in social development and education; tangible contributions to economic development and national values in the spirit of dharma yuddha. 5. Historical studies of the role of Hindus in the states and kingdoms of the Nusantara; the principles of pañca yadnya and rājadharma in state governance; the contribution of Hindu values to the ethics of governance, law, and the culture of the Nusantara. 6. The ethics of dāna and yajña as forms of social responsibility; the concept of lokasaṁgraha in the Bhagavad Gītā (3:20–25); tax awareness as seva for the state; the value of patriotism in the practice of karma yoga among Indonesian Hindus.	1.4	Hindu Religious Education

Study Materials	Elements in BK	Course Formation	Course Name
	7. Teachings on gender equality in the Vedas and the Mahābhārata (e.g. the stories of Sulabhā and Draupadī); the principle of non-violence (ahiṁsā) in social relations; the contribution of Hindus to social movements and dharma-based democracy. 8. Teachings on tolerance in the Vedas: ekaṁ sat viprā bahudhā vadanti; interfaith dialogue in the Upaniṣads and the Gītā; the history of Hindu pluralism in India and the Archipelago; the principles of madhyama mārga and sarva dharma sambhava in the practice of religious moderation. 9. Strategies for interfaith education and dharmic dialogue; forums for harmony based on the values of ṛta and satya; case studies of Hindu tolerance in Bali and Java; analysis of religious freedom according to the 1945 Constitution and the inclusive stance of Hindu teachings."		
BK 1.5 Buddhism	1. Study of the concept of sāddha in the suttas (e.g., Sāleyyaka Sutta, Kalama Sutta), typologies of saddhā (buttika, ākāra, bala), the function of saddhā in the spiritual life of Buddhists, and the strengthening of faith through practice. 2. Contemporary issues such as secularism, spiritual crisis, and pluralism; the Buddhist approach to the concept of Divinity (without a creator), the relevance of nibbāna and brahmavihāra in addressing contemporary spiritual needs. 3. Buddhist perspectives on anattā, dukkha, paṭiccasamuppāda, and nibbāna; the dignity of human beings as moral beings with the potential for enlightenment; the relevance of these teachings in addressing the questions of modern life. 4. Teachings on dāna, sīla, karuṇā, mettā, and samacariya; the role of the Buddhist community in social, economic, and educational development; Buddhist contributions to national values and public cooperation. 5. Historical studies of the role of Buddhists in the state; the principles of pañca-sīla and dasavidha-rājadhamma; the contribution of Buddhist values in fostering social justice, the rule of law, and a culture of compassion. 6. The ethics of dāna as the basis for public contribution; the teaching of lokasangraha (worldly maintenance); tax awareness as a form of secular dāna; the value of nationalism in Indonesian Buddhism.	1.5	Buddhist Religious Education

Study Materials	Elements in BK	Course Formation	Course Name
	7. Teachings on gender equality in the suttas (e.g. Therīgāthā, Sutta Nipāta); the principle of non-violence (ahiṃsā); lay participation in social movements and the strengthening of democracy based on Buddhist values. 8. Suttas on tolerance and dialogue (e.g. Kalama Sutta, Cūḷekasāla Sutta); the history of Buddhist pluralism in India and Southeast Asia; the concept of majjhima paṭipadā as the basis for religious moderation. 9. Interfaith education strategies; interfaith dialogue forums based on mettā-karuṇā; case studies of religious pluralism; legal analysis of religious freedom in the context of Indonesia and Buddhism.		
BK 1.6 Confucianism	1. A study of the concept of xin (faith) in the Analects, the Doctrine of the Mean, and the Works of Mencius; the typology of xin in relation to zhong, shu, and cheng ; the role of faith in the moral and spiritual lives of the faithful; the strengthening of faith through the daily practices of li and xiu shen. 2. Contemporary issues such as hedonism, the ethical crisis, and secularism; the Confucian view of Tian (Heaven) as the source of moral order; the relevance of dao, ren, and ming in addressing the spiritual void of the modern age. 3. The Confucian view of human nature (xing) as inherently good; the value of the junzi as humanity's noble potential; the interconnection between moral cultivation (xiu shen) and social harmony; the application of these teachings to address contemporary existential questions. 4. The teachings of ren, yi, li, zhong, shu, and xin in social life; moral obligations towards family and state; the tangible contributions of Confucians in the social, educational, and national spheres; the practices of gong (co-operation) and xiao (filial piety) in fostering harmony. 5. Historical study of the role of Confucian communities within the state; moral practices based on da xue (great learning) and zhong yong (balance); the contribution of the value of he (harmony) in realising a compassionate legal system and social culture. 6. The concept of li as a civil order and public ethics; the value of dāna in social forms through gongde (collective virtue); taxation as a civic duty to ensure national harmony; patriotism as an expression of zhong (loyalty) towards the state.	1.6	Confucian Religious Education

Study Materials	Elements in BK	Course Formation	Course Name
	7. The doctrine of equality in classical Confucianism (e.g., Ren applies universally); the spirit of non-violence and wen (civilisation); the role of Confucian figures in education and social reform; the contribution of the faithful in strengthening democratic values. 8. The attitude of tolerance in the Zhong Yong and Lun Yu; the principle of he er bu tong (harmony without uniformity); the history of Confucian pluralism in East Asia and Southeast Asia; the practice of zhong-shu as the basis for interfaith dialogue and religious moderation. 9. Interfaith education strategies based on the values of Ren and Yi; the development of interfaith and humanitarian forums; case studies on the role of Confucian figures in religious harmony; analysis of constitutions and guarantees of religious freedom within the context of Confucian values		
BK 1.7 Pancasila Education	1. History and objectives of Pancasila Education; 2. Pancasila as the national identity; 3. Pancasila in the context of the 1945 Constitution; 4. Pancasila as the foundation of the state; 5. Pancasila as the ideology of the nation and state; 6. Pancasila as a philosophical system; 7. Pancasila and state policy; 8. Pancasila as an ethical system; 9. The actualisation of Pancasila values in the 5A campaign: Anti-Corruption, Anti-Intolerance, Anti-Bullying, Anti-Sexual Violence, and Anti-Drugs; 10. The correlation between the state law of "Pancasila" and religious law; 11. Pancasila as the foundation for the development of science; 12. Pancasila as a paradigm of science; 13. Pancasila as a paradigm for national life	1.7	Pancasila Education
BK 1.8 Citizenship Education	1. Introduction to Citizenship Education; 2. The Development and Implementation of the Indonesian Republic's Constitutional System; 3. Indonesian Democracy; 4. Indonesian National Identity and Anti-Intolerance; 5. Indonesian Citizenship; 6. Human Rights (HR), Anti-Bullying and Anti-Sexual Violence; 7. Judicial Violations and the Enforcement of Human Rights; 8. National Resilience;	1.8	Civics Education

Study Materials	Elements in BK	Course Formation	Course Name
	9. National Strategic Policy; 10. Archipelagic Outlook; 11. Implementation of the Archipelagic Concept in National Life; 12. Methods for Measuring Indonesia's Territorial Waters and Airspace; 13. Regional Autonomy, Anti-Corruption and Anti-Drug Measures.		
BK 1.9 Indonesian	1. The nature of the Indonesian language as the language of unity and the national language; 2. Exploring texts in academic life (instilling values and the nature of the Indonesian language as a vehicle for knowledge); 3. Exploring the world of literature; 4. Designing research proposals and activity proposals; 5. Reporting research findings and activity outcomes; 6. Expressing oneself in academic articles	1.9	Indonesian Language
BK 1.10 English	*1. Simple Present Tense* *2. Present Continuous Tense* *3. Simple Past Tense* 4. *Present Perfect Tense* *5. Simple Future Tense*	1.10	English for IT
BK 1.11 PGRI	1. History and Dynamics of PGRI. 2. The Nature and Identity of PGRI. 3. Profile of Pancasila Students. 4. The Role of PGRI in Improving the Quality of Human Resources. 5. PGRI Organisational Ethics. 6. PGRI and Social Media. 7. Challenges Facing PGRI in the Age of Disruption.	1.11	PGRI Studies
BK 1.12 KKN	Digital Literacy; Inclusive and Exclusive Leadership; National Perspective; Talent Development; Entrepreneurship; Problem Solving in the Community; Non-formal Education; Public Speaking; Journalism.	1.12	Community Service Program
BK 2.1 Learning Theories and Fundamentals of Digital Pedagogy	Learning theories: Behaviourist, Cognitive, Constructivist, Connectivist; The relevance of learning theories in the design of ICT learning; Digital learning models appropriate to each theoretical approach; The TPACK framework and the role of pedagogy in digital education.	2.1, 2.2	Foundations of Education
BK 2.2 Learning Based on *Higher Order Thinking Skills* (HOTs)	Revised Bloom's Taxonomy: Understanding HOTs levels (analysis, evaluation, creation); HOTs learning strategies and models: problem-based, inquiry-based, project-based;	2.2 2.2	Learner Development

Study Materials	Elements in BK	Course Formation	Course Name
	Designing ICT learning activities that stimulate higher-order thinking; Assessment of HOTs through authentic assessment (portfolios, analytical rubrics, digital products).		Internship – Lesson Plan Development
BK 2.3 ICT Learning Planning Based on Pedagogy	Development of teaching materials: syllabus, lesson plans, digital modules based on Higher Order Thinking Skills (HOTS); Development of learning objectives based on outcomes and HOTs; Integration of media and technology within a pedagogical context; Adapting learning for various levels (primary, lower secondary, upper secondary, non-formal).	2.3, 2.2, 3.2 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 3.5	Learning Planning Microteaching
BK 2.4 Implementation of Responsive and Innovative ICT Learning	Teaching strategies based on digital literacy and collaboration Differentiated learning: learning styles, special needs, personalisation Use of LMS and digital applications for active learning Microteaching practice: integration of pedagogy and technology	2.2, 2.3, 2.4, 3.1, 3.2	e-Learning
BK 2.5 Procedure-Based Learning Evaluation s and Pedagogical Reflection	Assessment techniques: formative, summative and diagnostic in ICT Measuring Higher-Order Thinking Skills (HOTs) using a procedural approach Analysis of learning outcomes and follow-up (remedial & enrichment) Pedagogical reflection: how teachers learn from their teaching practice		
BK 2.6 Formulation of Procedural Problem-Solving in ICT Learning	Identification of ICT learning problems in the field Pedagogy-based procedural problem-solving techniques (e.g. through the ADDIE approach or lesson study) Case studies: analysing learning failures and their reformulation Development of data-driven solutions and learning reflections	2.6, 2.5.5, 4.2.2	Computer Science Learning
BK 2.7 Learning Theories Supporting the Development of Higher-Order Thinking Skills	Meaningful learning and higher-order thinking, Inquiry-based learning and problem-based learning approaches, The role of digital media in stimulating analysis, evaluation and creation, Integration of HOTs into the ICT curriculum	2.2.2	Internship-Curriculum Analysis
BK 2.8 21st-Century Learning Strategies	Adaptive and technology-literacy-based, The 4C Concepts: Communication, Collaboration, Critical Thinking, Creativity, Flexible learning: blended, flipped classroom, and self-paced learning, The role of the teacher as a facilitator of digital learning		
BK 2.9 Differentiation and Learning Styles	The theory of multiple intelligences and personalised learning, Differences in learning styles (visual, auditory, kinesthetic) in the context of e-learning,		

Study Materials	Elements in BK	Course Formation	Course Name
	Adaptive learning design using technology, Case studies of adaptive learning platforms (e.g. Ruangguru, Khan Academy)		
BK 2.10 Integration of ICT in Learning Theory	The role of technology as a support for learning theories, Concept map between learning theories and digital approaches, Analysis of the effectiveness of digital tools according to theoretical approaches, Evaluation of the suitability of media to student characteristics		
BK 3.1 The Concepts of HOTs and TPACK in ICT Learning	TPACK components: Technology, Pedagogy, Content and their integration Differences between TPACK and conventional ICT and general learning The role of TPACK in supporting 21st-century educational transformation Representation of TPACK in the curriculum, lesson plans and learning activities	3.1	Internship – Learning Media Development
BK 3.2 Design of ICT Learning Tools	Analysis of the needs and characteristics of digital native learners; Formulation of learning objectives with HOTs dimensions (Bloom Revised); Development of learning objective sequences (LOS) and initial assessment; Integrated strategies: PjBL, Inquiry-based learning, STEAM; Use of technology-based learning media and resources (Simulations, Coding, AR/VR, AI-based tools)	3.2	Internship– Teaching Practice
BK 3.3 Implementation of Project-Based Learning & Higher-Order Thinking Skills	Learning implementation models: blended, flipped, hybrid Project/problem-based and collaborative teaching techniques Integration of digital tools for collaboration and exploration (Google Workspace, Canva Edu, Scratch, Replit, etc.) Simulation of implementation in the classroom and in the community/PKBM Adaptations for inclusion, differentiation and learner diversity		
BK 3.4 Assessment and Evaluation of Higher-Order Thinking Skills (HOTS)	Designing HOTS assessment rubrics: analytical, holistic, authentic Technology-based formative and summative assessment techniques Digital portfolios as tools for reflection and process evaluation Use of Learning Analytics (student data dashboard) Teacher reflection based on assessment data (lesson study, peer review)	3.4, 2.5	Evaluation of Learning Process and Outcomes
BK 3.5 Follow-up and Improvement of Learning	Post-learning reflection based on reflective practice		

Study Materials	Elements in BK	Course Formation	Course Name
	Development of lesson plan improvements based on assessment results Action research for improving ICT learning The role of ICT teacher learning communities (MGMP, digital communities) Continuous professional development (CPD) and technology updates		
BK 4.1 Identifying Problems in the Technological Environment	Analysis of user needs and real-world problems in educational, social, or organisational contexts. Observation, interview and document analysis techniques. Formulating measurable and targeted technology-related problems	4.1, 4.3, 4.4, 4.6, 5.3, 5.4 4.1, 4.4	Interactive Multimedia Computer Network Management
BK 4.2 Theoretical and Technological Literature Review	Application of ICT theories (information systems, programming, data management, etc.) to map out solutions. Literature review to support the selection of technical approaches. Establishing a theoretical framework as the foundation for solutions		
BK 4.3 System and Problem Analysis	Requirements analysis techniques (Use Case, Stakeholder Mapping). Context diagrams and Data Flow Diagrams (DFDs). Mapping problems in the form of system logic. Case studies of simple system analysis	4.3, 4.4 4.3, 4.4	Artificial Intelligence Information Systems
BK 4.4 Designing Technological Solutions	Principles of user-centred solution design. Solution design techniques (mock-ups, wireframes, flowcharts, basic UML). Integration between system design (UI) and user experience (UX) approaches	4.4	Mobile Application Programming
BK 4.5 Simulation and Modelling of Solutions	Creation of non-functional prototypes based on scenarios. Mapping out the system usage flow (user journey). Simulation of solution processes using visual tools (draw.io, Figma, Miro)	4.5, 8.3	Computational Mathematics
BK 4.6 Solution Design Documentation	Writing system analysis and design documents. Detailing of functional and non-functional requirements. Preparation of technology-based solution proposal documents		
BK 5.1 Real-world Context of ICT Application	Scope and fields of ICT application (education, business, administration, social). Identification of real-world problems that can be solved using ICT. Mapping of user needs and the working environment. Case study: ICT integration in educational institutions or government agencies	5.1	Digital Data Processing
BK 5.2 Simulation of Information System Utilisation	Use of simple information systems for educational or organisational purposes. Management of academic data, inventory, attendance, and e-office.		

Study Materials	Elements in BK	Course Formation	Course Name
	Implementation of LMS, CMS, and similar applications (Moodle, Google Workspace, WordPress). Advanced spreadsheet practice (dashboards, visualisation, data logic)		
BK 5.3 Development of Simple Application Solutions	Application design based on field requirements. Basic web or lightweight mobile programming. Rapid prototyping tools (Thunkable, Glide, MIT App Inventor, or Google Apps Script). Practical application development using no-code/low-code platforms	10.3, 10.5, 10.6	Game Programming
BK 5.4 System Evaluation and Testing	Planning system testing and validation. Testing based on checklists and use case scenarios. Documentation of test results and user feedback. Iterative improvements based on test results		
BK 5.5 Application of ICT Professional Standards	Introduction to industry standards such as ISO 9126, ITIL, COBIT (introduction). Professional ethics when developing solutions for third parties. Professional writing of technology project reports. Technical documentation and user manuals		
BK 5.6 Mini Implementation Project	Simulation of an ICT implementation project based on real-world case studies. Cross-functional team collaboration (design, data, user testing). Presentation of implementation results at a class forum/mini symposium. Assessment based on performance, process, and the usefulness of the solution	5.6, 3.1, 3.2, 3.3, 3.4, 3.5 5.6, 8.2	Educational Media Project IT Project Management
BK 6.1 Research and Development	To provide students with opportunities to practise conducting research and development through assignments or projects. Optimising the use of computers and other digital tools to collect, analyse, process data, and produce reports in the form of a dissertation. The implementation of research and development includes problem-solving, surveys, experiments, and observation.	6.1, 6.2, 4.2, 4.4, 10.2	Final Project
BK 6.2 Proposal Seminar	Drafting a research proposal in the field of Information Technology Education and its applications based on the results of problem identification using appropriate research methods	6.2	Information Technology Proposal Seminar
BK 7.1 Mindset and Role of Technopreneurs	Definition of a technopreneur and its importance in digital transformation. Characteristics of creative, opportunistic, and disruptive thinking in technology-based ventures. Case studies of inspirational technopreneurs (local & global)	7.1, 7.2, 7.3, 7.4, 7.5, 7.6	Technology-Based Entrepreneurship
Module 7.2: Identifying Technology-Based Business Opportunities	Analysis of technology trends and social issues as opportunities. Techniques for observing market and community needs through technology. Study of market research tools: Google Trends, Ubersuggest, LinkedIn Insights		

Study Materials	Elements in BK	Course Formation	Course Name
BK 7.3 Initial Design of Digital Products	Digital product concepts from the perspective of ideas and user needs. Designing mock-ups, concept sketches, or interaction flows (without coding). Study of user journey approaches and pain point mapping		
BK 7.4 Initial Product Idea Validation	Initial validation techniques (questionnaires, user interviews, lightweight prototypes). Application of problem-solution fit. Initial feedback loop before the MVP is created	7.4, 4.2	Statistics
BK 7.5 Creating a Pitch Deck	Structure of a pitch deck for investors or an academic audience. Visualisation of the idea, product value, and market potential. Pitch delivery simulation: style, duration, and logical flow		
Module 7.6 Case Studies in Technopreneurship in Indonesia	Lessons from early-stage digital start-ups. The ideation, validation, and communication processes they have undertaken. Critical reflection and recommendations for local innovation	7.6, 8.2, 9.1	Field Study
BK 8.1 Introduction to Technology-Based Decision Making	Definitions and basic processes of decision-making. Types of decisions in digital business (strategic, operational, technical). The role of data and information in the decision-making process. Case studies: successful/failed technology-based decisions	8.1, 8.3, 8.4 8.1, 8.2	Decision Support System Big Data
BK 8.2 Information and Data Analysis for ICT Business	Identification and collection of data from internal and external sources. Data processing using simple tools (Excel, Google Data Studio). Basic data visualisation techniques to support decision-making. Digital business dashboards and reports	8.2, 11.5, 11.6, 11.7, 11.8	Data Mining
BK 8.3 Decision-Making Techniques	Rational and intuitive decision-making. SWOT analysis, risk analysis, and cost-benefit analysis. Multi-criteria decision-making (MCDM) methods. A/B testing in digital decision-making		
BK 8.4 Business Decision Support Tools	Google Analytics, Looker Studio, and simple analytical tools. ERP, CRM, and decision support systems (DSS). Business Intelligence (BI) tools for start-ups. The use of AI or chatbots in assistive decision-making		
BK 8.5 Digital Business Strategies	Growth and development strategies for IT businesses. Competitor analysis and product positioning. Monetisation of digital products: freemium, subscription, advertising, SaaS. Case studies: strategic decisions for digital start-ups		

Study Materials	Elements in BK	Course Formation	Course Name
BK 8.6 Risk & Uncertainty Management	Identifying risks in technology business development. Risk mitigation and response strategies. Scenario analysis and decision simulation. Case studies on digital product risks (security, scaling, user loss)		
BK 8.7 Legality and the Impact of Technology Decisions	Legal consequences of data-driven business decisions. Customer data protection in the decision-making process. Transparency and fairness in algorithm-based decisions. Ethical study of automated decision-making (AI/ML)		
BK 9.1 Professionalism in the ICT Sector	Definitions and standards of professionalism in the technology sector. Work competencies, work ethics, and soft skills in the ICT industry. Professional responsibility towards work outcomes and technology users. Case studies on professional conduct in system/application development	1.1, 9.1, 9.2, 9.3, 9.7 7.1, 8.1, 9.1, 9.7 9.1, 9.2, 11.2	Professional Ethics in Education Industrial Work Practice Computer Network Management
BK 9.2 Ethics and Morality in Technology	General ethical concepts vs ICT professional ethics. Ethical principles: honesty, justice, social responsibility. Ethical dilemmas in technology development (AI, algorithms, big data). Case studies on ethics in programming and system use		
BK 9.3 Professional Codes of Ethics in Information Technology	Code of ethics of the ACM, IEEE, and similar bodies. National professional codes of ethics in the ICT sector (APTIKOM, etc.). Interpretation and application of codes of ethics in the workplace. Breaches of the code of ethics and their legal implications	9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7 9.4, 9.5 9.4	Technology-Based Entrepreneurship Digital Forensics Cybersecurity
BK 9.4 Security, Privacy, and Social Responsibility	Issues regarding the privacy of personal data in digital systems. Consumer and technology user protection. The role of ICT professionals in preventing data misuse. The social impact of technology: digital inequality, addiction, surveillance		
BK 9.5 Technology Regulation and Law in Indonesia	The ITE Law (Information and Electronic Transactions). Personal Data Protection Act (PDP Act). Intellectual Property Rights (IPR) in the ICT sector.		

Study Materials	Elements in BK	Course Formation	Course Name
	Legal case studies on the misuse of technology		
BK 9.6 Ethics of AI and Automated Algorithm Use	Algorithmic bias and digital discrimination. The influence of algorithms on user behaviour. Ethics of AI use in education, business, and security. Tech fairness and inclusive design		
BK 9.7 Leadership and Organisational Ethics	Ethical leadership within ICT teams. A work culture that upholds responsibility and integrity. Managing ethical conflicts in technology projects. The role of mentors and strengthening work ethics in development teams		
BK 9.8 English for Information Technology	IT Professions and Workplace Communication Reading and Writing Technical Texts Project Presentation and Documentation Trends in Information Technology	4.1, 5.2, 9.8	English for IT
BK 10.1 Designing learning materials	The process of creating or selecting tools and materials to be used in the learning process to help learners understand and master the subject matter		
BK 10.2 Creative Multimedia Research	The process of exploration and investigation used to generate new ideas, innovations, and creative solutions in the fields of design, production, and distribution of multimedia content	10.2, 10.4, 10.5, 10.6 6.1, 10.2, 8.2,	AR Systems Information Technology Research Methodology
BK 10.3 Multimedia Project Proposal	The process of preparing a written document detailing the plan, objectives and implementation of a multimedia project	10.3, 10.4, 10.5, 10.6	2D/3D Animation
BK 10.4 Visual Direction (Storyline)	Understanding of visual direction, Breaking them down into smaller, more specific components Designing a process that enables these components to be realised	10.4 10.4, 10.5	Animation Technology Videography Techniques
BK 10.5 Visual Assets (Graphic Design, Animation, Video Graphics)	Understanding of project requirements, Use of appropriate software, and Mastery of visual techniques to produce high-quality results.	10.5, 10.6	Graphic Design, Motion Tracking Technology
BK 10.6 Integration of all multimedia components related to audio and visuals	The process of combining elements such as text, images, audio, video and animation into a coherent and engaging experience	10.6 10.6 10.6	User Interface Design Animation Technology Systems Analysis and Design
BK 11.1 Programme Specifications	Mastery of programming language execution commands Understanding of programme specifications	11.1, 11.2, 11.3 4.1, 11.1, 11.2	Algorithms and Programming Data Structures

Study Materials	Elements in BK	Course Formation	Course Name
		11.1, 11.2, 11.3, 11.4	Object-Oriented Programming
Module 11.2 Writing Code in Accordance with Guidelines and Best Practices	Avoiding common errors and improving overall code quality		
BK 11.3 Structured Programming	An approach to building programmes by breaking them down into small, structured and easily understandable parts (procedures)		
BK 11.4 Object-Oriented Programming	Breaking a program down into smaller parts called objects, each of which has its own data and functions, and can interact with one another	11.4, 11.5, 11.6, 11.7, 11.8, 11.9	Software Engineering
BK 11.5 Libraries or Pre-existing Components	Useful for speeding up application development and learning programming concepts		
BK 11.6 Database Access	Choices of programming languages, database types, and tools that can be used	11.6, 5.1 11.6 11.6	Data Communication Big Data Database Systems
BK 11.7 Programme Code Documentation	Helps other programmers understand the logic, functions, and usage of the code, particularly during maintenance, repair, or further development	11.7	Data Mining, Data Science
BK 11.8 Debugging	An essential skill that must be mastered to ensure the programme runs smoothly and produces the correct output	11.8	Data Mining, Data Science
BK 11.9 Unit Testing	The process of testing the smallest components of a programme to ensure that they function correctly	11.9	Software Testing
BK 11.10 Operating Systems	Basic concepts and use of operating systems, The role of the operating system in a computer, How an operating system manages resources on hardware, particularly computers, such as memory, storage and I/O; How an operating system handles concurrency, manages processes and threads, scheduling, input/output, file management, and provides protection and security; Students learn by using the Windows and Linux operating systems, both when understanding concepts and when developing related programmes.	11.10	Server Operating Systems
BK 11.11 Computer Network Management	Basic Concepts of Server Operating Systems, Installation and Configuration of Server Operating Systems, User and Permission Management, Service and Process Management, File Sharing and Remote Access, Web Servers and Database Servers, Mail Server and DNS Server, Backup and Recovery,	4.5, 11.11	Server Operating Systems

Study Materials	Elements in BK	Course Formation	Course Name
	Virtualisation and Containerisation (Optional / Intermediate), Monitoring and Logging		

Table 6.3 Calculation of credit weight for each course

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Islamic Religious Education	PLO-1 Demonstrates character and conduct that reflect adaptability, enthusiasm and integrity as an expression of devotion to God Almighty		30	0.6666667	2
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology		30	0.6666667	2
2	Christian Religious Education	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
3	Catholic Religious Education	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
4	Buddhist Religious Education	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
5	Hindu Religious Education	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
6	Confucian Religious Education	PLO-1 Able to demonstrate character and manners that reflect adaptability,		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		enthusiasm, and integrity as an expression of devotion to God Almighty.				
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
7	PGRI Studies	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-2 Mastery of learning theory concepts in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as the ability to formulate procedural problem-solving strategies.		30	0.6666667	2
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
8	Indonesian Language	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		PLO-2 Mastery of learning theory concepts in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as the ability to formulate procedural problem-solving strategies.		30	0.6666667	2
		PLO-3 Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of Technological Pedagogical Content Knowledge (TPCK).		30	0.6666667	2
		PLO-8 Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
9	Civics Education	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-7 Evaluate and integrate concepts of religion, nationalism, the constitution, language, entrepreneurship, and technology- , alongside the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		corruption) to support the development of professional knowledge and practice.				
10	English	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-2 Mastery of theoretical concepts in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as the ability to formulate procedural problem-solving strategies.		30	0.6666667	2
		PLO-3 Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of Technological Pedagogical Content Knowledge (TPCK).		30	0.6666667	2
		PLO-8 Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions ( ) independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
11	Technology-based Entrepreneurship	PLO-7 Evaluating and integrating concepts of religion, nationalism, the constitution, language, and technology-based entrepreneurship with		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and practice.				
		PLO-9 Taking responsibility in the field of information technology and its learning, through effective communication in group work.		30	0.6666667	2
12	Community Service Programme – Digital Literacy	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions, both independently and in groups, through collaboration in the field of information technology.		30	0.6666667	2
13	Community Service Program – Problem Solving in the Community	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
14	Community Service	PLO-1 Able to demonstrate		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Program – Inclusive and Exclusive Leadership	character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.				
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
15	Community Service Program – Non-Formal Education	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		30	0.6666667	2
16	Microteaching	PLO-1 Able to demonstrate character and conduct ( ) that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		field of information technology.				
17	Internship-Curriculum Analysis	PLO-2 Mastering learning theory concepts in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving strategies.		30	0.6666667	2
		PLO-3 Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of Technological Pedagogical Content Knowledge (TPCK).		30	0.6666667	2
		PLO-10 Able to develop multimedia learning resources in the field of information technology education creatively and professionally.		30	0.6666667	2
18	Internship-Lesson Plan Development	PLO-2 Mastering learning theory concepts in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving.		30	0.6666667	2
		PLO-3 Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		schools or non-formal educational institutions as an implementation of Technological Pedagogical Content Knowledge (TPCK).				
		PLO-10 Able to develop multimedia learning materials in the field of information technology education in a creative and professional manner.		30	0.6666667	2
19	Internship-Learning Media Development	PLO-2 Mastering learning theory concepts in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving.		30	0.6666667	2
		PLO-3 Able to design, implement, evaluate , and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of Technological Pedagogical Content Knowledge (TPCK).		30	0.6666667	2
		PLO-10 Able to develop multimedia learning resources in the field of information technology education in a creative and professional manner.		30	0.6666667	2
20	Internship-Teaching Practice	PLO-2 Mastering theoretical concepts of learning in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		as being able to formulate procedural problem-solving strategies.				
		PLO-3 Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of Technological Pedagogical Content Knowledge (TPCK).		30	0.6666667	2
		PLO-10 Able to develop multimedia learning resources in the field of information technology education creatively and professionally.		30	0.6666667	2
21	Foundations of Education	PLO-2 Mastery of learning theory concepts in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as the ability to formulate procedural problem-solving strategies.		30	0.6666667	2
22	Professional Ethics in Education	PLO-1 Able to demonstrate character and conduct that reflect adaptability, enthusiasm, and integrity as an expression of devotion to God Almighty.		30	0.6666667	2
		PLO-2 Mastery of learning theory concepts in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as the ability to		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		formulate procedural problem-solving strategies.				
23	Student Development	PLO-2 Mastering theoretical concepts of learning in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving strategies.		30	0.6666667	2
24	Learning Planning	PLO-2 Mastering learning theory concepts in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving strategies.		30	0.6666667	2
		PLO-3 Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of Technological Pedagogical Content Knowledge (TPCK).		30	0.6666667	2
25	Computer Science Learning	PLO-2 Mastering the theoretical concepts of learning in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		procedural problem-solving strategies.				
		PLO-4 Mastering theoretical concepts in the field of information technology in depth, as well as being able to formulate procedural problem-solving strategies.		30	0.6666667	2
26	Evaluation of Learning Process and Outcomes	PLO-2 Mastering learning theory concepts in the field of information technology- s to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving strategies.		30	0.6666667	2
		PLO-3 Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of Technological Pedagogical Content Knowledge (TPCK).		30	0.6666667	2
27	e-Learning	PLO-2 Mastering theoretical concepts of learning in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal educational institutions in depth, as well as being able to formulate procedural problem-solving strategies.		45	1	2
		PLO-3 Able to design, implement, evaluate and follow up on learning in the field of information technology, as		45	1	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of *Technological Pedagogical Content Knowledge* (TPCK).				
28	Algorithms and Computer Programming	PLO-11 Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements specifications.		25	0.5555555556	3
29	Computational Mathematics	PLO-4 Mastering theoretical concepts in the field of information technology in depth, as well as being able to formulate procedural problem-solving approaches.		20	0.4444444444	2
		PLO-8 Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions, both independently and in groups, through collaboration in the field of information technology.		20	0.4444444444	2
30	Digital Data Processing	PLO-5 Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.		20	0.4444444444	2
31	Graphic Design	PLO-10 Able to develop multimedia learning materials in the field of information technology education in a creative and professional manner.		20	0.4444444444	2
		PLO-11 Able to design, develop and		40	0.8888888889	3

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		evaluate basic software- s efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements.				
32	Videography Techniques	PLO-10 Ability to develop multimedia learning materials in the field of information technology education in a creative and professional manner		30	0.6666667	3
33	Operating Systems	PLO-4 Possesses a thorough understanding of theoretical concepts in the field of information technology, and is able to formulate procedural solutions to problems.		25	0.5555555556	3
		PLO-5 Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.		25	0.5555555556	3
		PLO-11 Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages and relevant techniques and tools, based on user requirements.		60	1.333333	3
34	Database Systems	PLO-4 Mastering theoretical concepts in the field of information technology in depth, as well as being able to formulate procedural		40	0.8888888889	3

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		problem-solving approaches.				
		PLO-5 Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.		45	1	3
		PLO-11 Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages and relevant techniques and tools, based on user requirements.		50	1,11111	3
35	User Interface Design	PLO-4 Mastering theoretical concepts in the field of information technology in depth, as well as being able to formulate procedural problem-solving approaches.		30	0.6666667	3
		PLO-5 Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.		35	0.7777778	3
		PLO-10 Able to develop multimedia learning materials in the field of information technology education in a creative and professional manner		45	1	3
36	Computer Networks	PLO-4 Mastering theoretical concepts in the field of information technology in depth, as well as being able to formulate procedural problem-solving approaches.		30	0.6666667	3

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		PLO-5 Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.		35	0.7777778	3
		PLO-11 Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages and relevant techniques and tools, based on user requirements.		45	1	3
37	English for IT	PLO-4 Mastering theoretical concepts in the field of information technology in depth, as well as being able to formulate procedural problem-solving approaches.		30	0.6666667	2
		PLO-5 Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.		30	0.6666667	2
		PLO-9 Demonstrates responsibility in the field of information technology and its learning, through effective communication within group work		30	0.6666667	2
38	Animation Technology	PLO-10 Ability to develop multimedia learning materials in the field of information technology education in a creative and professional manner		30	0.6666667	2

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
39	System Analysis and Design	PLO-10 Able to develop multimedia learning materials in the field of information technology education in a creative and professional manner		35	0.7777778	3
40	Game Programming	PLO-10 Ability to develop multimedia learning materials in the field of information technology education in a creative and professional manner		45	1	3
41	Field Study	PLO-7 Evaluating and integrating concepts of religion, nationalism, the constitution, language, and technology-based entrepreneurship with the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and practice		35	0.7777778	3
		PLO-8 Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions independently and in groups through collaboration in the field of information technology.		40	0.8888889	
		PLO-9 Demonstrates responsibility in the field of information technology and its learning, through effective communication within group work		60	1.3333333	3
42	Statistics	PLO-4 Mastering theoretical concepts in the field of information technology in		40	0.8888889	3

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		depth, as well as being able to formulate procedural problem-solving approaches.				
		PLO-7 Evaluating and integrating concepts of religion, nationalism, the constitution, language, and technology-based entrepreneurship with the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and practice		45	1	3
43	Computer Network Management	PLO-9 Demonstrates responsibility in the field of information technology and its learning, through effective communication within group work		40	0.8888889	3
		PLO-10 Able to develop multimedia learning resources in the field of information technology education in a creative and professional manner		45	1	3
44	Information Technology Research Methodology	PLO-6 Able to design and produce academic work to solve problems and adapt to change in a reflective manner		30	0.6666667	3
		PLO-8 Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions independently and in groups through collaboration in the field of information technology.		30	0.6666667	3
		PLO-10		30	0.6666667	3

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Able to develop multimedia learning materials in the field of information technology education creatively and professionally				
45	Mobile Application Programming	PLO-4 Mastering theoretical concepts in the field of information technology in depth, as well as being able to formulate procedural problem-solving approaches.		40	0.8888889	3
46	Server Operating Systems	PLO-4 Possesses a thorough understanding of theoretical concepts in the field of information technology, and is able to formulate procedural solutions to problems.		40	0.8888889	3
		PLO-11 Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages and relevant techniques and tools, based on user requirements specifications.		45	1	3
47	Information Systems	PLO-4 Possesses a thorough understanding of theoretical concepts in the field of information technology, and is able to formulate procedural solutions to problems.		60	1.3333333	3
48	IT Project Management	PLO-5 Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to		40	0.8888889	3

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		the situations encountered.				
		PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions, both independently and in groups, through collaboration in the field of information technology.		45	1	3
49	Information Technology Proposal Seminar	PLO-6 Ability to design and produce academic work to solve problems and adapt to change in a reflective manner		60	1.44444	3
50	Cybersecurity	PLO-9 Demonstrates responsibility in the field of information technology and its learning, through effective communication within a team		40	0.8888889	3
51	Artificial Intelligence	PLO-4 Possesses a deep understanding of theoretical concepts in the field of information technology, and is able to formulate procedural solutions to problems.		40	0.8888889	3
52	Big Data	PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		40	0.8888889	3
		PLO-11 Able to design, develop and		45	1	3

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements specifications.				
53	Software Testing	PLO-11 Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements specifications.		40	0.8888889	3
54	Industrial Work Practice	PLO-7 Evaluating and integrating concepts of religion, nationalism, the constitution, language, and technology-based entrepreneurship with the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and practice		45	1	3
		PLO-8 Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions independently and in groups through collaboration in the field of information technology.		45	1	3
		PLO-9 Demonstrates responsibility in the field of information		45	1	3

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		technology and its learning, through effective communication within group work				
55	Software Engineering	PLO-11 Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages ( ) as well as relevant techniques and tools, based on user requirements specifications.		40	0.8888889	3
56	Interactive Multimedia	PLO-4 Mastering theoretical concepts in the field of information technology in depth, and being able to formulate procedural problem-solving approaches		40	0.8888889	3
		PLO-5 Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.		40	0.8888889	3
57	2D/3D Animation	PLO-10 Able to develop multimedia learning materials in the field of information technology education in a creative and professional manner.		40	0.8888889	3
58	Educational Media Project	PLO-3 Ability to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of		40	0.8888889	3

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Technological Pedagogical Content Knowledge (TPCK).				
		PLO-5 Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.		40	0.8888889	3
59	Decision Support System	PLO-8 Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions, both independently and in groups, through collaboration in the field of information technology.		40	0.8888889	3
60	Digital Forensics	PLO-9 Demonstrates responsibility in the field of information technology and its learning, through effective communication within a team.		40	0.8888889	3
61	AR System	PLO-10 Capable of developing multimedia learning materials in the field of information technology education in a creative and professional manner.		40	0.8888889	3
62	Data Mining	PLO-8 Able to make sound decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions both independently and in groups through collaboration in the field of information technology.		45	1	3

Course No.	Course Name	PLO assigned to the course	PLO Achievement Indicator	Time required to achieve PLO (in hours / credits)	Total (in hours / credits)	Conversion to credits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		PLO-11 Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements specifications.		45	1	3
63	Final Project	PLO-4 Demonstrate a thorough understanding of theoretical concepts in the field of information technology, and be able to formulate procedural solutions to problems		90	2	6
		PLO-6 Able to design and produce academic work to solve problems and adapt to change in a reflective manner		90	2	6
		PLO-7 Evaluate and integrate concepts of religion, nationality, the constitution, language, and technology-based entrepreneurship with the 5A values (anti-violence, anti-drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and practice		90	2	6
		PLO-10 Able to develop multimedia learning materials in the field of information technology education creatively and professionally.				

Table 6.4 PLO - Course Mapping Matrix

No	Course	PLO										
		1	2	3	4	5	6	7	8	9	10	11
Semester 1												
1	Indonesian Language	√	√	√					√			
2	Pancasila Education	√						√				
3	English	√	√	√					√			
4	Foundations of Education		√									
5	Algorithms and Computer Programming											√
6	Computational Mathematics				√				√			
7	Digital Data Processing					√						
8	Graphic Design										√	√
Semester 2												
1	Islamic Religious Education	√							√			
2	Christian Religious Education	√							√			
3	Catholic Religious Education	√							√			
4	Buddhist Religious Education	√							√			
5	Hindu Religious Education	√							√			
6	Confucian Religious Education	√							√			
7	PGRI Studies	√	√						√			
8	Civics Education	√						√				
9	Student Development		√									
10	Videography Techniques										√	
11	Data Structures				√							√
12	Data Communication				√	√				√		
13	Object-Oriented Programming				√	√						√
Semester 3												
1	Professional Ethics in Education	√	√									
2	Learning Planning		√	√								
3	Operating Systems				√	√						√
4	Database Systems				√	√						√
5	User Interface Design				√	√					√	
6	Computer Networks				√	√						√
7	English for IT				√	√				√		
8	Animation Technology										√	
Semester 4												
1	Computer Science Studies		√		√							
2	Systems Analysis and Design										√	
3	Game Programming										√	
4	Field Study							√	√	√		
5	Statistics				√			√				
6	Computer Network Management									√		√
7	Educational Media Project			√		√						
Semester 5												
1	Evaluation of Learning Process and Outcomes		√	√								

No	Course	PLO										
		1	2	3	4	5	6	7	8	9	10	11
2	e-Learning		√	√								
3	Information Technology Research Methodology						√		√		√	
4	Mobile Application Programming				√							
5	Server Operating Systems				√							√
6	Information Systems				√							
7	Software Testing											√
Semester 6												
1	Microteaching	√							√			
2	IT Project Management					√			√			
3	Information Technology Proposal Seminar						√					
4	Cybersecurity									√		
5	Artificial Intelligence				√							
6	Technology-based Entrepreneurship							√		√		
Semester 7												
1	Internship-Curriculum Analysis		√	√							√	
2	Internship -Lesson Plan Development		√	√							√	
3	Internship - Learning Media Development		√	√							√	
4	Internship - Teaching Practice		√	√							√	
	CoE Young Professionals Programme											
1	Big Data								√			√
2	Industrial Work Practice							√	√	√		
3	Software Engineering											√
	CoE PMPM											
1	Interactive Multimedia				√	√						
2	2D/3D Animation										√	
3	Work Placement							√	√	√		
	Non-CoE											
1	Decision Support System								√			
2	Digital Forensics									√		
3	AR Systems										√	
5	Data Mining								√			√
Semester 8												
1	Community Service - Digital Literacy	√							√			
2	Community Service Program – Problem Solving in the Community	√							√			
3	Community Service Program – Inclusive and Exclusive Leadership	√							√			
4	Community Service Program – Non-Formal Education	√							√			
5	Final Project				√		√	√			√	

6. Course Organisation for the Programme of Study

Table 7.1. Course Organisation

No	Credit	Course Code	Course Name	Course Group				Course Group					
				Compulsory Course	Elective Course	Compulsory Course in the Curriculum	Distinctive Course	MPK	MKK	MKB	MPB	MBB	MKDK
1	2	3425121601	Islamic Religious Education			v		v					v
2		3425121602	Catholic Religious Education			v		v					v
3		3425121603	Christian Religious Education			v		v					v
4		3425121604	Hindu Religious Education			v		v					v
5		3425121605	Buddhist Religious Education			v		v					v
6		3425121606	Confucian Religious Education			v		v					v
7	2	3425121607	Pancasila Education			v		v					v
8	2	3425121608	Civics Education			v		v					v
9	2	3425121609	Indonesian Language			v		v					v
10	2	3425221610	PGRI Studies				v	v					v
11	2	3425221611	English				v	v	v		v		v
12	4	3425241612	Technology-Based Entrepreneurship				v	v				v	
13	2	3425224613	Community Service Program – Digital Literacy				v	v				v	
14	4	3425244614	Community Service Program - Problem Solving in the Community				v	v				v	
15	2	3425224615	Community Service Program– Inclusive and Exclusive Leadership				v	v				v	

No	Credit	Course Code	Course Name	Course Group				Course Group					
				Compulsory Course	Elective Course	Compulsory Course in the Curriculum	Distinctive Course	MPK	MKK	MKB	MPB	MBB	MKDK
16	2	3425224616	Community Service Program – Non-Formal Education				v	v				v	
17	2	3425322617	Microteaching	v				v					
18	2	3425324618	Internship-Curriculum Analysis	v				v				v	
19	2	3425324619	Internship-Lesson Plan Development	v				v				v	
20	2	3425324620	Internship - Learning Media Development	v				v				v	
21	4	3425344621	Internship-Teaching Practice	v				v				v	
22	2	3425321622	Foundations of Education	v					v				v
23	2	3425321623	Professional Ethics in Education	v					v		v		v
24	2	3425321624	Student Development	v					v				v
25	2	3425321625	Learning Planning	v					v				
26	2	3425321626	Computer Science Learning	v					v				
27	2	3425321627	Evaluation of Learning Process and Outcomes	v					v		v		
28	2	3425321628	e-Learning	v					v				
29	3	3425332629	Algorithms and Computer Programming	v					v				v
30	3	3425331630	Computational Mathematics	v					v				v
31	2	3425321631	Digital Data Processing	v					v				v
32	3	3425332632	Graphic Design	v					v				v
33	3	3425332633	Videography Techniques	v							v		
34	3	3425331634	Data Structures	v							v		
35	2	3425321635	Data Communication	v							v		
36	3	3425332636	Object-Oriented	v							v		

No	Credit	Course Code	Course Name	Course Group				Course Group					
				Compulsory Course	Elective Course	Compulsory Course in the Curriculum	Distinctive Course	MPK	MKK	MKB	MPB	MBB	MKDK
			Programming										
37	3	3425332637	Operating System	v							v		
38	3	3425332639	Database Systems	v							v		
39	3	3425332640	User Interface Design	v							v		
40	3	3425332641	Computer Networks	v							v		
41	2	3425331642	English for IT	v					v		v		
42	2	3425332643	Animation Technology	v							v		
43	3	3425332644	System Analysis and Design	v							v		
44	3	3425332645	Game Programming	v							v		
45	3	3425334646	Field Study	v				v				v	
46	2	3425321647	Statistics	v					v		v		
47	3	3425332648	Computer Network Management	v							v		
48	3	3425331650	Information Technology Research Methodology	v						v	v		
49	3	3425332651	Mobile Application Programming	v							v		
50	3	3425332652	Server Operating Systems	v							v		
51	3	3425332653	Information Systems	v							v		
52	3	3425332654	Information Technology Project Management	v						v		v	
53	3	3425333655	Information Technology Proposal Seminar	v						v	v		
54	3	3425332656	Cybersecurity	v							v		
55	3	3425332657	Artificial Intelligence	v							v		
56	2	3425422658	Big Data		v					v			
57	3	3425432659	Software Testing	v						v			
58	3	3425434660	Industrial Work Practice		v			v		v		v	

No	Credit	Course Code	Course Name	Course Group				Course Group					
				Compulsory Course	Elective Course	Compulsory Course in the Curriculum	Distinctive Course	MPK	MKK	MKB	MPB	MBB	MKDK
59	2	3425422661	Software Engineering		v					v			
60	2	3425422662	Interactive Multimedia		v					v			
61	3	3425432663	2D/3D Animation		v					v			
62	3	3425432664	Educational Media Project	v						v			
63	2	3425422665	Decision Support System		v					v			
64	2	3425422666	Digital Forensics		v					v			
65	3	3425432667	Augmented Reality System		v					v			
66	3	3425432668	Data Mining		v					v			
67	3	3425332649	Data Science		v								
68	2	3425422670	Motion Tracking Technology		v								
69	6	3425765669	Final Projectcommu				v				v		

Table 7.2. Course Organisation Matrix

Smt	SKS	Jml MK	Kelompok Mata Kullah																												
			MK-Wajib (Prodi)								MK-Pilihan												MKWK			MK Pencirl UPGRIS				
VIII	16	5																								KKN-Literasi Digital (2 SKS) CPL 1,8	KKN-Problem Solving di Masyarakat (4 SKS) CPL 1,8	KKN-Kepemimpinan Inklusif dan Ekslusif (2 SKS) CPL 1,8	KKN-Pendidikan Non Formal (2 SKS) CPL 1,8	Tugas Akhir (6 SKS) CPL 4,6,10
VII	20	8	PLP-Analisis Kurikulum (2 SKS) CPL 2,3,10	PLP-Pengembangan Rencana Pembelajaran (2 SKS) CPL 2,3,10	PLP-Pengembangan Media Pembelajaran (2 SKS) CPL 2,3,10	PLP-Praktik Mengajar (4 SKS) CPL 2,3,10					Big Data (2 SKS) CPL 4,5,9	Data Science (3 SKS) CPL 3,4,9	Rekayasa Perangkat Lunak (2 SKS) CPL 11	Praktek Kerja Industri (3 SKS) CPL 7,8,9	Multimedia Interaktif (2 SKS) CPL 4,5	Animasi 2D/3D (3 SKS) CPL 10	Teknologi Motion Tracking (2 SKS) CPL 3,5	Praktek Kerja Industri (3 SKS) CPL 7,8,9	Sistem Pendukung Keputusan (2 SKS) CPL 8	Digital Forensic (2 SKS) CPL 9	Sistem AR (3 SKS) CPL 10	Data Mining (3 SKS) CPL 11								
VI	18	6	Microteaching (2 SKS) CPL 1,8	Manajemen Proyek TI (3 SKS) CPL 5,8	Seminar Proposal TI (3 SKS) CPL 6	Keamanan Siber (3 SKS) CPL 9	Kecerdasan Artifisial (3 SKS) CPL 4																			Kewirausahaan berbasis Teknologi (4 SKS) CPL 1,9				
V	19	7	Metodologi Riset TI (3 SKS) CPL 6,8,10	Pemrograman Aplikasi Mobile (3 SKS) CPL 4,6,9	Sistem Operasi Server (3 SKS) CPL 4,11	Sistem Informasi (3 SKS) CPL 4,9	Evaluasi Proses dan Hasil Belajar (2 SKS) CPL 2,3	e-Learning (2 SKS) CPL 2,3	Pengujian Perangkat Lunak (3 SKS) CPL 3,4,9																						
IV	19	7	Pembelajaran Keilmuan Komputer (2 SKS) CPL 2,4	Analisa dan Desain Sistem (3 SKS) CPL 10	Pemrograman Game (3 SKS) CPL 7,8,10	Studi Ekskursi (3 SKS) CPL 7,8,9	Statistika (2 SKS) CPL 4,7	Manajemen Jaringan Komputer (3 SKS) CPL 9,11	Proyek Media Pembelajaran (3 SKS) CPL 3,5																						
III	20	8	Perencanaan Pembelajaran (2 SKS) CPL 2,3	Etika Profesi Kependidikan (2 SKS) CPL 1,2	English for IT (2 SKS) CPL 4,5,9	Sistem Basis Data (3 SKS) CPL 4,5,11	Desain Antarmuka Pengguna (3 SKS) CPL 4,5,10	Jaringan Komputer (3 SKS) CPL 4,5,11	Teknologi Animasi (2 SKS) CPL 10	Sistem Operasi (3 SKS) CPL 4,5,11																					
II	19	8	Perkembangan Peserta Didik (2 SKS) CPL 2	Teknik Videografi (3 SKS) CPL 8,9,10	Struktur Data (3 SKS) CPL 4,11	Komunikasi Data (2 SKS) CPL 4,5,9	Pemrograman Berbasis Objek (3 SKS) CPL 4,5,11																Pendidikan Agama (2 SKS) CPL 1	Pendidikan Kewarganegaraan (2 SKS) CPL 1,7		Ke-PGRI-an (2 SKS) CPL 1,2				
I	19	8	Algoritma dan Dasar Pemrograman (3 SKS) CPL 11	Matematika Komputasi (3 SKS) CPL 4,8	Pengolahan Data Digital (2 SKS) CPL 5	Desain Grafis (3 SKS) CPL 10,11	Landasan Kependidikan (2 SKS) CPL 2																Pendidikan Pancasila (2 sks) CPL 1,7	Bahasa Indonesia (2 sks) CPL 1,2,3		Bahasa Inggris (2 sks) CPL 1,2,3				
	150	57																													

7. PLO Fulfilment Map for the Course

Table 8.1. PLO Fulfilment Map for the Course

Learning Outcomes / Sub-Learning Outcomes	Course Name/Course Block/Semi-Block							
	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
PLO-1 Demonstrating character and conduct that reflect adaptability, enthusiasm and integrity as an expression of devotion to God Almighty	Indonesian Language Pancasila Education English	Islamic Religious Education Christian Religious Education Catholic Religious Education Buddhist Religious Education Hindu Religious Education Confucian Religious Education PGRI Studies	Indonesian Language Pancasila Education			Microteaching		Community Service Programme – Digital Literacy Community Service Programme – Problem Solving in the Community Community Service Programme – Inclusive and Exclusive Leadership Community Service Programme – Non-Formal Education

Learning Outcomes / Sub-Learning Outcomes	Course Name/Course Block/Semi-Block							
	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
PLO-2 Mastering theoretical concepts of learning in the field of information technology to design, implement and evaluate higher-order thinking skills (HOTs) in schools or non-formal education institutions in depth, as well as being able to formulate procedural problem-solving strategies.	Indonesian Language Foundations of Education English	Student Development PGRI Studies	Professional Ethics in Education Learning Planning	Computer Science Learning	Evaluation of Learning Processes and Outcomes e-Learning		Internship-Curriculum Analysis Internship-Lesson Plan Development Internship-Learning Media Development Internship-Teaching Practice	
PLO-3 Able to design, implement, evaluate and follow up on learning in the field of information technology, as well as develop higher-order thinking skills (HOTs) in schools or non-formal educational institutions as an implementation of Technological Pedagogical Content Knowledge (TPCK)	Indonesian Language English		Learning Planning		Evaluation of ~~Learning~~ Processes and Outcomes e-Learning		Internship-Curriculum Analysis Internship-Lesson Plan Development Internship-Learning Media Development	

Learning Outcomes / Sub-Learning Outcomes	Course Name/Course Block/Semi-Block							
	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
							Internship-Teaching Practice Learning Media Project	
PLO-4 Mastering theoretical concepts in the field of information technology in depth, as well as being able to formulate procedural problem-solving strategies.	Computational Mathematics	Data Structures Data Communication Object-Oriented Programming	Database Systems User Interface Design Computer Networks English for IT	Computer Science Learning Operating Systems Statistics	Mobile Application Programming Server Operating Systems Information Systems	Artificial Intelligence	Interactive Multimedia	Final Project
PLO-5 Able to apply information technology knowledge by utilising science and technology in problem-solving and able to adapt to the situations encountered.	Digital Data Processing	Data Communication Object-Oriented Programming	Database Systems User Interface Design Computer Networks English for IT	Operating Systems		IT Project Management	Interactive Multimedia Educational Media Projects	

Learning Outcomes / Sub-Learning Outcomes	Course Name/Course Block/Semi-Block							
	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
PLO-6 Able to design and produce academic work to solve problems and adapt to change in a reflective manner					Information Technology Research Methodology	Information Technology Proposal Seminar		Final Project
PLO-7 Evaluate and integrate concepts of religion, nationalism, the constitution, language, and technology-based entrepreneurship with the 5A values (anti-violence, anti- -drugs, anti-bullying, anti-intolerance, and anti-corruption) to support the development of professional knowledge and practice	Pancasila Education	Civics Education		Field Study Statistics			Industrial Work Practice	
PLO-8 Able to make appropriate decisions based on the analysis of information and data, and able to provide guidance in selecting various alternative solutions independently and in groups through collaboration in the field of information technology.	Computational Mathematics			Field Study	Information Technology Research Methodology	Microteaching IT Project Management	Big Data Industrial Work Practice Decision Support System Data Mining	Community Service Program – Digital Literacy Community Service Program – Problem Solving in the Community Community Service Program –

Learning Outcomes / Sub-Learning Outcomes	Course Name/Course Block/Semi-Block							
	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
								Inclusive and Exclusive Leadership Community Service Program – Non-Formal Education
PLO-9 Taking responsibility for information technology and its learning, through effective communication within group work		Data Communication	Civics Education English for IT	Field Study Computer Network Management		Cybersecurity	Industrial Work Practice Digital Forensics	
PLO-10 Ability to develop multimedia learning materials in the field of information technology education in a creative and professional manner	Graphic Design	Videography Techniques	User Interface Design Animation Technology	Systems Analysis and Design Game Programming	Information Technology Research Methodology		Internship-Curriculum Analysis Internship-Lesson Plan Development Internship-Development of Learning Media	Final Project

Learning Outcomes / Sub-Learning Outcomes	Course Name/Course Block/Semi-Block							
	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
							Internship-Teaching Practice 2D/3D Animation AR Systems	
PLO-11 Able to design, develop and evaluate basic software solutions efficiently and in accordance with software engineering principles, using modern programming languages as well as relevant techniques and tools, based on user requirements specifications.	Algorithms and Computer Programming Graphic Design	Data Structures Object-Oriented Programming	Database Systems Computer Networks	Operating Systems Computer Network Management	Server Operating Systems		Big Data Software Testing Software Engineering Data Mining	

8. Course distribution per semester and PLO assessment scheduling

8.1 Course Distribution

Table 9.1. List of Courses

No	Course Code	Course	T	P	S	L	TA	Number of credits	Course Name Prerequisites
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
List of Courses for Semester I									
1	3425221611	English	2					2	
2	3425121607	Pancasila Education	2					2	
3	3425121609	Indonesian Language	2					2	
4	3425321622	Foundations of Education	2					2	
5	3425332629	Algorithms and Computer Programming	2	1				3	
6	3425331630	Computational Mathematics	3					3	
7	3425321631	Digital Data Processing	2					2	
8	3425332632	Graphic Design	2	1				3	
Total Course Load for Semester I								19	
List of Courses for Semester II									
1	3425121601	Islamic Religious Education	2					2	
2	3425121602	Christian Religious Educational						0	
3	3425121603	Catholic Religious Education						0	
4	3425121604	Hindu Religious Education						0	
5	3425121605	Buddhist Religious Education						0	
6	3425121606	Confucian Religious Education						0	
7	3425121608	Civics Education	2					2	
8	3425221610	PGRI Studies	2					2	
9	3425321624	Student Development	2					2	
10	3425332633	Videography Techniques	2	1				3	Graphic Design
11	3425331634	Data Structures	3					3	Algorithms and Programming
12	3425321635	Data Communication	2					2	Digital Data Processing
13	3425332636	Object-Oriented Programming	2	1				3	Algorithms and Programming
Total Course Load for Semester II								19	
List of Courses for Semester III									
1	3425321625	Learning Planning	2					2	Student Development

No	Course Code	Course	T	P	S	L	TA	Number of credits	Course Name Prerequisites
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2	3425321623	Professional Ethics in Education	2					2	Foundations of Education
3	3425332637	Operating System	2	1				3	
4	3425332639	Database Systems	2	1				3	Data Structures
5	3425332640	User Interface Design	2	1				3	Object-Oriented Programming
6	3425332641	Computer Networks Management	2	1				3	Operating Systems
7	3425331642	English for IT	2					2	English
8	3425332643	Animation Technology	2					2	Graphic Design, Videography Techniques
Total Course Load for Semester III								20	
List of Courses for Semester IV									
1	3425321626	Computer Science Learning	2					2	Learning Planning
2	3425332644	Systems Analysis and Design	3					3	Database Systems
3	3425332645	Game Programming	2	1				3	User Interface Design, Animation Technology
4	3425334646	Field Study				3		3	
5	3425321647	Statistics	2					2	
6	3425332648	Computer Network Management	2	1				3	Computer Networks
7	3425422664	Educational Media Project	2	1				3	
Total Course Load for Semester IV								19	
List of Courses for Semester V									
1	3425331650	Information Technology Research Methodology	3					3	Indonesian Language, Statistics
2	3425332651	Mobile Application Programming	2	1				3	User Interface Design, Game Programming
3	3425332652	Server Operating Systems	2	1				3	Operating Systems, Computer Network Management
4	3425332653	Information Systems	2	1				3	System Analysis and Design
5	3425321627	Evaluation of Learning Process and Outcomes	2					2	Learning Planning
6	3425321628	e-Learning	2					2	Computer Science Learning
7	3425432659	Software Testing	2	1				3	
Total Course Load for Semester V								19	

No	Course Code	Course	T	P	S	L	TA	Number of credits	Course Name Prerequisites
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
List of Courses for Semester VI									
1	3425322617	Microteaching	2					2	Academic Learning s, Computers, e-Learning
2	3425332654	Information Technology Project Management	2	1				3	Technology-Based Entrepreneurship
3	3425333655	Information Technology Proposal Seminar			3			3	Indonesian Language, Information Technology Research Methodology
4	3425332656	Cybersecurity	2	1				3	Computer Network Management
5	3425332657	Artificial Intelligence	2	1				3	Mobile Application Programming
6	3425241612	Technology-Based Entrepreneurship	4					4	
Total Course Load for Semester VI								18	
List of Courses for Semester VII									
		Intenship							
1	3425324618	Internship-Curriculum Analysis				2		2	Microteaching
2	3425324619	Internship– Lesson Plan Development				2		2	Microteaching
3	3425324620	Internship - Learning Media Development				2		2	Microteaching
4	3425344621	Internship -Teaching Practice				4		4	Microteaching
								10	
		Centre of Excellence for Young Programmers							
5	3425422658	Big Data		2				2	Object-Oriented Programming, IT Project Management
6	3425332649	Data Science	2	1				3	Object-Oriented Programming, IT Project Management
7	3425434660	Industrial Work Practice				3		3	Field Study, IT Project Management
8	3425422661	Software Engineering		2				2	Object-Oriented Programming, IT

No	Course Code	Course	T	P	S	L	TA	Number of credits	Course Name Prerequisites
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
									Project Management
								10	
		CoE PMPM							
9	3425422662	Interactive Multimedia		2				2	Animation Technology, Game Programming, Mobile Application Programming, IT Project Management
10	3425432663	2D/3D Animation	2	1				3	Animation Technology, Game Programming, Mobile Application Programming, IT Project Management
11	3425422670	Motion Tracking Technology		2				2	Animation Technology, Game Programming, Mobile Application Programming, IT Project Management
	3425434660	Industrial Work Practice				3		3	Study Excursion, IT Project Management
								10	
		Non-CoE							
12	3425422665	Decision Support System		2				2	Artificial Intelligence, IT Project Management
13	3425422666	Digital Forensics		2				2	Artificial Intelligence, IT Project Management
14	3425432667	Augmented Reality System	2	1				3	Artificial Intelligence, IT Project Management
15	3425432668	Data Mining	2	1				3	Artificial Intelligence, IT

No	Course Code	Course	T	P	S	L	TA	Number of credits	Course Name Prerequisites
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
									Project Management
								10	
Total Course Load for Semester VII								**20**	
List of Courses for Semester VIII									
1	3425244614	Community Service Program – Problem Solving in the Community				4		4	
2	3425765614	Final Project	6					6	Indonesian Language, English for IT, Research Methodology , Information Technology Proposal Seminar
Total Course Load for Semester VIII								**10**	

8.2 PLO Assessment Timetable

Table 9.2 PLO assessment schedule table for programmes outside the field of engineering

NO	COURSE CODE	Course Name	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
(1)	(2)	(3)	(4)	(5)	(6)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	3425121601	Islamic Religious Education	Semester 2							Semester 2			
2	3425121602	Catholic Religious Education	Semester 2							Semester 2			
3	3425121603	Christian Religious Education	Semester 2							Semester 2			
4	3425121604	Hindu Religious Education	Semester 2							Semester 2			
5	3425121605	Buddhist Religious Education	Semester 2							Semester 2			
6	3425121606	Confucian Religious Education	Semester 2							Semester 2			
7	3425121607	Pancasila Education	Semester 1	Semester 1						Semester 1			
8	3425121608	Civics Education	Semester 2	Semester 2	Semester 2					Semester 2			
9	3425121609	Indonesian Language	Semester 1						Semester 1				
10	3425221610	PGRI Studies	Semester 2						Semester 2				
11	3425221611	English	Semester 1	Semester 1	Semester 1					Semester 1			
12	3425241612	Technology-based Entrepreneurship							Semester 6		Semester 6		
13	3425224613	Community Service Program - Digital Literacy	Semester 8							Semester 8			

NO	COURSE CODE	Course Name	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
(1)	(2)	(3)	(4)	(5)	(6)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
14	3425244614	Community Service Program – Problem Solving in the Community	Semester 8							Semester 8			
15	3425224615	Community Service Program – Inclusive and Exclusive Leadership	Semester 8							Semester 8			
16	3425224616	Community Service Program – Non-Formal Education	Semester 8							Semester 8			
17	3425322617	Microteaching	Semester 6							Semester 6			
18	3425324618	Internship-Curriculum Analysis		Semester 7	Semester 7							Semester 7	
19	3425324619	Internship - Lesson Plan Development		Semester 7	Semester 7							Semester 7	
20	3425324620	Internship - Learning Media Development		Semester 7	Semester 7							Semester 7	
21	3425344621	Internship-Teaching Practice		Semester 7	Semester 7							Semester 7	
22	3425321622	Foundations of Education		Semester 1									
23	3425321623	Professional Ethics in Education	Semester 3	Semester 3									
24	3425321624	Student Development		Term 2									
25	3425321625	Learning Planning		Semester 3	Semester 3								
26	3425321626	Computer Science Learning		Semester 4		Semester 4							
27	3425321627	Evaluation of Learning Process and Outcomes		Semester 5	Semester 5								
28	3425321628	e-Learning		Semester 5	Semester 5								
29	3425332629	Algorithms and Computer Programming											Semester 1

NO	COURSE CODE	Course Name	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
(1)	(2)	(3)	(4)	(5)	(6)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
30	3425331630	Computational Mathematics				Semester 1				Semester 1			
31	3425321631	Digital Data Processing					Semester 1						
32	3425332632	Graphic Design										Semester 1	Semester 1
33	3425332633	Videography Techniques										Semester 2	
34	3425331634	Data Structures				Semester 2							Semester 2
35	3425321635	Data Communication				Semester 2	Semester 2				Semester 2		
36	3425332636	Object-Oriented Programming				Semester 2	Semester 2						Semester 7
37	3425332637	Operating System				Semester 3	Semester 3						Semester 3
38	3425332639	Database Systems				Semester 3	Semester 3						Semester 3
39	3425332640	User Interface Design				Semester 3	Semester 3					Semester 3	
40	3425332641	Computer Networks				Semester 3	Semester 3						Semester 3
41	3425331642	English for IT				Semester 3	Semester 3				Semester 3		
42	3425332643	Animation Technology										Semester 3	
43	3425332644	Systems Analysis and Design										Semester 4	
44	3425332645	Game Programming										Semester 4	

NO	COURSE CODE	Course Name	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
(1)	(2)	(3)	(4)	(5)	(6)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
45	3425334646	Field Study							Semester 4	Semester 4	Semester 4		
46	3425321647	Statistics				Semester 4			Semester 4				
47	3425332648	Computer Network Management									Semester 4		Semester 4
48	3425331650	Information Technology Research Methodology						Semester 5		Semester 5		Semester 5	
49	3425332651	Mobile Application Programming				Semester 5							
50	3425332652	Server Operating Systems				Semester 5							Semester 5
51	3425332653	Information Systems				Semester 5							
52	3425331654	IT Project Management					Semester 6			Semester 6			
53	3425333655	Information Technology Proposal Seminar						Semester 6					
54	3425332656	Cybersecurity									Semester 6		
55	3425332657	Artificial Intelligence				Semester 6							
56	3425422658	Big Data								Semester 7			Semester 7
57	3425432659	Software Testing											Semester 7
58	3425434660	Industrial Work Practice							Semester 7	Semester 7	Semester 7		
59	3425422661	Software Engineering											Semester 7

NO	COURSE CODE	Course Name	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
(1)	(2)	(3)	(4)	(5)	(6)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
60	3425422662	Interactive Multimedia				Semester 7	Semester 7						
61	3425432663	2D/3D Animation										Semester 7	
62	3425422664	Educational Media Project			Semester 7		Semester 7						
63	3425422665	Decision Support System								Semester 7			
64	3425422666	Digital Forensics									Semester 7		
65	3425432667	Augmented Reality System										Semester 7	
66	3425432668	Data Mining								Semester 7			Semester 7
67	3425765669	Final Project				Semester 8		Semester 8	Semester 8			Semester 8	

9. Assessment

Assessment standards apply to both the learning process and learning outcomes. Assessment of the learning process uses a rubric, whilst assessment of learning outcomes uses a portfolio.

9.1 Rubric

A rubric is an assessment guide or guideline that describes the criteria required for assessing or grading students' learning outcomes. A rubric consists of the dimensions or aspects being assessed and the criteria for students' learning outcomes or indicators of learning achievement.

The purpose of assessment using a rubric:

a. To clarify the dimensions or aspects and levels of assessment of students' learning outcomes;
b. To serve as a driver or motivator for students to achieve their learning outcomes.

A rubric may be comprehensive or general in nature, or it may be specific, applying only to a particular topic or a specific learning outcome.

9.2 Portfolio of Learning Outcomes

A portfolio is an instrument/document for assessing learning outcomes based on a collection of information demonstrating the development of students' PLO achievements over a specific period. This information may consist of students' work from the learning process deemed to be their best, or work demonstrating the development of their ability to achieve learning outcomes.

10. Implementation of Students' Right to Learn (Maximum 3 Semesters)

MBKM activities in accordance with Ministry of Education, Culture, Research and Technology Regulation No. 39 of 2025, termed as learning activities outside the study

programme, constitute a learning process conducted outside the Study Programme, whether carried out internally at UPGRIS or externally, comprising:

1. learning within other study programmes within UPGRIS;
2. learning within the same study programme at higher education institutions outside UPGRIS;
3. studies within other degree programmes at higher education institutions outside UPGRIS; and
4. learning at non-university institutions

The scope of MBKM activities or learning outside the degree programme includes:

1. Work placements/work experience;
2. Village Development/Thematic Community Service;
3. Student Exchange;
4. Humanitarian Projects;
5. Research;
6. Entrepreneurship Activities;
7. Independent Studies/Projects; and
8. Teaching Assistance in Educational Institutions
9. National defence

10.1 Implementation Model for Forms of Learning Outside the Study Programme

Table 11.1. Implementation Model for Learning Activities Outside the Degree Programme

Learning Activities for Undergraduate / Applied Undergraduate Students, 144 credits								
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
	19 credits	19 credits	20 credits	19 credits	19 credits	18 credits	20 credits	8 credits
	English	Islamic Education	Learning Planning	Computer Science Learning	Information Technology Research Methodology	Microteaching	Internship-Curriculum Analysis	Community Service Program-Digital Literacy
	Pancasila Education	Christian Religious Education	Professional Ethics in Education	Systems Analysis and Design	Mobile Application Programming	IT Project Management	Internship – Lesson Plan Development	Community Service Program – Problem Solving in the Community

Learning Activities for Undergraduate / Applied Undergraduate Students, 144 credits								
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
	19 credits	19 credits	20 credits	19 credits	19 credits	18 credits	20 credits	8 credits
	Indonesian Language	Catholic Religious Education	Operating Systems	Game Programming	Server Operating Systems	Information Technology Proposal Seminar	Internship - Learning Media Development	Community Service Program – Leadership in Inclusive and Exclusive Education
	Foundations of Education	Hindu Religious Education	Database Systems	Field Studies	Information Systems	Cybersecurity	Internship- Teaching Practice	Community Service Program – Non-Formal Education
	Algorithms and Computer Programming	Buddhist Religious Education	User Interface Design	Statistics	Evaluation of Learning Processes and Outcomes	Artificial Intelligence	Big Data	Final Project
	Computational Mathematics	Confucian Religious Education	Computer Networks	Computer Network Management	e-Learning	Technology-Based Entrepreneurship	Data Science	
	Digital Data Processing	Civics Education	English for IT	Educational Media Projects	Software Testing		Industrial Work Practice	
	Graphic Design	PGRI Studies	Animation Technology				Software Engineering	
		Student Development					Interactive Multimedia	
		Videography Techniques					2D/3D Animation	
		Data Structures					Motion Tracking Technology	
		Data Communication					Industrial Work Practice	
		Object-Oriented Programming					Decision Support Systems	
							Digital Forensics	
							AR Systems	

Learning Activities for Undergraduate / Applied Undergraduate Students, 144 credits								
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
	19 credits	19 credits	20 credits	19 credits	19 credits	18 credits	20 credits	8 credits
							Data Mining	

10.2 Compulsory Courses within the Programme

Table 11.2. Compulsory Courses

No	Course Code	Course Name	Credit Weight	Description
1	3425332629	Algorithms and Computer Programming	3	
2	3425331630	Computational Mathematics	3	
3	3425321631	Digital Data Processing	2	
4	3425332632	Graphic Design	3	
5	3425321622	Faundations of Education	2	
6	3425321624	Student Development	2	
7	3425332633	Videography Techniques	3	
8	3425331634	Data Structures	3	
9	3425321635	Data Communication	2	
10	3425332636	Object-Oriented Programming	3	
11	3425321625	Learning Planning	2	
12	3425321623	Professional Ethics in Education	2	
13	3425331642	English for IT	2	
14	3425332639	Database Systems	3	
15	3425332640	User Interface Design	3	
16	3425332641	Computer Networks	3	
17	3425332643	Animation Technology	2	
18	3425332637	Operating System	3	
19	3425332644	Systems Analysis and Design	3	
20	3425332645	Game Programming	3	
21	3425334646	Field Study	3	
22	3425321647	Statistics	2	
23	3425332648	Computer Network Management	3	
24	3425321626	Computer Science Learning	2	
25	3425422664	Educational Media Project	2	
26	3425331650	Information Technology Research Methodology	3	

No	Course Code	Course Name	Credit Weight	Description
27	3425332651	Mobile Application Programming	3	
28	3425332652	Server Operating Systems	3	
29	3425332653	Information Systems	3	
30	3425321627	Evaluation of Learning Process and Outcomes	2	
31	3425321628	e-Learning	2	
32	3425432659	Software Testing	3	
33	3425322617	Microteaching	2	
34	3425333655	Information Technology Proposal Seminar	3	
35	3425332656	Cybersecurity	3	
36	3425332657	Artificial Intelligence	3	
37	3425331654	IT Project Management	3	
38	3425324618	Internship-Curriculum Analysis	2	
39	3425324619	Internship-Lesson Plan Development	2	
40	3425324620	Internship-Learning Media Development	2	
41	3425344621	Internship-Teaching Practice	4	
Total credit points:			**107**	

10.3 Course Learning (MK) outside the Study Programme

Table 11.3. Course Learning Outside the Programme of Study

No	Courses taken	Maximum credit weight	Remarks
1	Outside the programme, on/off campus	6	The courses taken have the same total credit weight, and have corresponding PLOs and additional competencies.
2	In the same programme outside the campus	20	Courses taken must have the same total credit weight; it is recommended that these be selected from courses agreed upon by the association/society of similar study programmes.
3	Off-campus (DUDI, etc.)	20	Courses taken must have the same total credit weight and demonstrate alignment with PLOs and relevant additional competencies.
Maximum total credit weight		46	

10.4 Forms of Learning Activities Outside Higher Education

Table 11.4. Forms of Learning Activities Outside the Study Programme

No	Form of Learning Activity	Can be carried out with credit weight		Notes
		Regular	Fulfilment of Study Load Outside the Study Programme	
1	Educational Internship	10	≤20	Internship activities fulfilling the study load outside the degree programme may be converted into several modules that have corresponding PLOs and a duration of study activities commensurate with the credit weight of those modules.
2	Work/Industry Placement CoE Young Programmer	10	≤20	Internship activities to fulfil the study load outside the study programme can be converted into several courses that have compatible PLOs and learning time commensurate with the course's credit weight.
3	Work/Industry Placement CoE in Multimedia Learning Materials Development	10	≤20	Internship activities to fulfil the study load outside the study programme can be converted into several courses that have compatible PLOs and learning activity times corresponding to the credit weight of those courses.
4	UPGRIS Thematic Community Service Programme	10	≤20	UPGRIS Thematic Community Service (KKNT) activities, which are an extension of the Regular Community Service (KKN), may be converted into several courses that align with the PLOs and have a duration of study commensurate with the course's credit weight.
5	Teaching Assistance at Educational Institutions (AMSP)	2	≤20	AMSP activities fulfilling the study load outside the study programme can be converted into several courses that have compatible PLOs and learning activity times corresponding to the course credit weight.
6	Student Exchange	2	≤20	Can be converted into several courses that have PLO alignment and learning time commensurate with the course's credit weight.

No	Form of Learning Activity	Can be carried out with credit weight		Notes
		Regular	Fulfilment of Study Load Outside the Study Programme	
7	Research	6	≤20	Can be converted into several courses that have PLO compatibility and learning activity time commensurate with the course's credit weight.
8	Entrepreneurship	10	≤20	Entrepreneurship Activities fulfilling the study load outside the degree programme may be converted into several courses that have PLO alignment and learning activity time commensurate with the course's credit weight, including the Entrepreneurship course if applicable.
9	Independent Study (Multimedia Learning Materials Manager)	10	≤20	Can be converted into several courses that have PLO alignment and learning activity time commensurate with the course's credit weight.
10	Independent Study (Junior Programmer)	10	≤20	Can be converted to several courses that have PLO equivalence and learning time commensurate with the course's credit weight.
11	Thematic Community Service	10	≤20	The KKNT activity for fulfilling the study load outside the study programme, which is an extension of the Regular Community Service Programme (KKN-Reguler), can be converted into several courses that have PLO alignment and learning activity time commensurate with the course credit weight.
12	Humanitarian project		≤20	Can be converted into several courses that have compatible PLOs and learning activity times corresponding to the course's credit weight.

10.5 Curriculum Structure for Learning Activities Outside the Study Programme

Table 11.5 Curriculum Structure for Learning Activities Outside the Degree Programme

Semester	Study Programme within the Programme	Forms of Study Outside the Degree Programme

Credit Points							Within the University	Other Institutions	Non-university
VIII									
VII									
VI									
V									
IV									
III									
II									
I									

10.6 PLO FOR FORMS OF LEARNING OUTSIDE THE DEGREE PROGRAMME

Table 10.5 PLO Achieved Through Learning Formats Outside the Study Programme

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
1	7	3425324618	Internship-Curriculum Analysis	2		v	v							v		Teaching Placement	1. Students must register with their department to participate in the educational placement (P). 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment Outside the Degree Programme in SIMEKAR, selecting the Educational Internship (P) activity 3. Students carry out the activities in accordance with the instructions of the Educational Internship Committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log,

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C). 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
2	7	3425324619	Internship-Lesson Plan Development	2		v	v							v		Teaching Placement	1. Students must register with their department to participate in the educational placement (P). 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	Educational Internship (P) activity 3. Students carry out the activities in accordance with the instructions of the Educational Internship committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C). 7. The Assessor for Fulfilment of Study Load Outside the Study Programme conducts an overall evaluation of student outcomes

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	(C)
3	7	3425324620	Internship-Learning Media Development	2		v	v							v		Educational Placement	1. Students must register with the programme to participate in the educational placement activity (, P). 2. Students must register for the Course Registration Form (KRS) for Study Load Fulfilment Outside the Degree Programme in SIMEKAR, selecting the Educational Internship (P) option 3. Students carry out activities in accordance with the instructions of the Educational Internship committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	the Study Programme and the Course Logbook (C). 6. The Internship Supervisor monitors the student's internship outcomes ( ) (C). 7. The Assessor for Fulfilment of Study Load Outside the Study Programme conducts an overall evaluation of student outcomes (C)
4	7	3425344621	Internship-Teaching Practice	4		v	v							v		Teaching Placement	1. Students must register with their department to participate in the educational placement (P). 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment Outside the Degree Programme in SIMEKAR, selecting the Educational Internship (P) activity 3. Students carry out the

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	activities in accordance with the instructions of the Educational Internship Committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity records ( ), critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C). 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
5	7	3425422658	Big Data	2				v	v				v			Work/Industry Placement CoE Young Programmers	conducted over 3 months, equivalent to 10 credits. 1. Students must register with the programme to participate in the CoE Electronics Prototyping and Programming (P) work placement/industrial placement. 2. Students must register for the 'Course Load Fulfilment Outside the Study Programme' module in SIMEKAR, selecting the CoE PMPM work placement/industrial placement activity (P). 3. Students carry out the activities in accordance with the instructions of the CoE PMPM work placement/industrial placement committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log,

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C). 6. The internship supervisor ( ) monitors the outcomes of the student's internship (C). 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
6	7	3425432659	Software Testing	3			v	v					v			Work Placement/Industry CoE Young Programmers	conducted over 3 months, equivalent to 10 credits. 1. Students must register with the programme to participate in the CoE Electronics Prototyping and Programming (P) work placement/industrial placement. 2. Students must register for the

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	‘Course Load Fulfilment Outside the Study Programme’ module in SIMEKAR, selecting the CoE PMPM work placement/industrial placement activity (P). 3. Students carry out activities in accordance with the instructions from the CoE PMPM work/industrial placement committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for fulfilment of the study load outside the degree programme and the course logbook (C). 6. The Internship Supervisor monitors the outcomes of the

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	student interns (C). 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
7	7	3425434660	Industrial Work Practice	3							v	v	v			Work Placement/Industry CoE Junior Programmer	conducted over 3 months, equivalent to 10 credits. 1. Students must register via the programme's to participate in the CoE Electronics Prototyping and Programming (P) work placement/industrial placement. 2. Students must register for the Course Registration Form (KRS) for Study Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the CoE PMPM work placement/industrial placement activity (P). 3. Students carry out the

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	activities in accordance with the instructions of the CoE PMPM work placement/industrial placement committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for the Fulfilment of the Course Load for the ‘ ’ programme outside the study programme and the course logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C). 7. The Assessor for Fulfilment of Study Load Outside the Study Programme conducts an overall evaluation of student outcomes (C)

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
8	7	3425422661	Software Engineering	2											v	Work/Industry Placement CoE Young Programmer	conducted over 3 months, equivalent to 10 credits. 1. Students must register with the programme to participate in the CoE electronics prototyping and programming (P) work placement/industrial placement. 2. Students must register for the 'Course Load Fulfilment Outside the Study Programme' module in SIMEKAR, selecting the CoE Work/Industrial Placement activity for the PMPM ( ) programme (P). 3. Students carry out the activities in accordance with the instructions of the CoE PMPM work placement/industrial placement committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log,

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C). 7. The Assessor for Fulfilment of Study Load Outside the Study Programme conducts an overall evaluation of student outcomes (C)
9	7	3425422662	Interactive Multimedia	2				v	v							Work/Industry Placement CoE PMPM	conducted over 3 months, equivalent to 10 credits. 1. Students must register with the programme to participate in the CoE Electronics Prototyping and Programming (P) work placement/industrial placement. 2. Students must register for the

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	‘Course Load Fulfilment Outside the Study Programme’ module in SIMEKAR, selecting the CoE PMPM Work/Industry Placement activity (P). 3. Students carry out the activities in accordance with the instructions of the CoE PMPM work placement/industrial placement committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for fulfilment of the study load outside the degree programme and the course logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C).

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
10	7	3425432663	2D/3D Animation	3										v		Work/Industry Placement CoE PMPM	conducted over 3 months, equivalent to 10 credits. 1. Students must register with the programme to participate in the CoE Electronics Prototyping and Programming (P) work placement/industrial placement. 2. Students must complete the Course Registration Form (KRS) for ‘ ’ (External to the Study Programme) in SIMEKAR, selecting the CoE PMPM Work/Industry Placement activity (P). 3. Students carry out the activities in accordance with the instructions of the CoE PMPM

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	work placement/industrial placement committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors SPADA for the fulfilment of study load requirements outside the degree programme and the course logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C). 7. The Assessor for the Fulfilment of the Learning Load Outside the Study Programme ( ) conducts an overall evaluation of student outcomes (C)
11	7	3425422664	Educational Media Project	2			v		v							Work/Industry Placement	conducted over 3 months, equivalent to 10 credits.

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																CoE PMPM	1. Students must register with the programme to participate in the CoE Electronics Prototyping and Programming (P) work placement/industrial placement. 2. Students must register for the 'Course Load Fulfilment Outside the Study Programme' module in SIMEKAR, selecting the CoE PMPM Work/Industry Placement activity (P). 3. Students carry out the activities in accordance with the instructions of the CoE PMPM work placement/industrial placement committee (D). 4. Students complete the ' ' forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C). 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
12	7	3425434660	Industrial Work Practice	3							v	v	v			Work Placement/Industry CoE PMPM	conducted over 3 months, equivalent to 10 credits. 1. Students must register with their programme to participate in the CoE Electronics Prototyping and Programming (P) work/industry placement. 2. Students must register for the 'Course Load Fulfilment Outside the Study Programme' module in SIMEKAR, selecting the CoE

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	PMPM work placement/industrial placement activity (P). 3. Students carry out the activities in accordance with the instructions of the CoE PMPM work placement/industrial placement committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C). 6. The internship supervisor ( ) monitors the outcomes of the student's internship (C). 7. The Assessor for Fulfilment of Study Load Outside the Study

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	Programme conducts an overall evaluation of student outcomes (C)
13	8	3425224613	Community Service Program-Digital Literacy	2	v							v		v		UPGRIS Thematic Community Service Programme	"Organised by the UPGRIS Community Service Centre carried out over approximately 3 months equivalent to 10 credit points 1. Students must register with their department to participate in the UPGRIS Thematic Community Service Programme (P) 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the UPGRIS Thematic Community Service Programme (P) 3. Students carry out the activities in accordance with the

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	instructions from the UPGRIS Thematic Community Service Programme committee (D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA fulfilment of study load outside the degree programme and the course logbook (C)
14	8	3425244614	Community Service Program – Problem Solving in the Community	4	v							v				UPGRIS Thematic Community Service Programme	"Organised by the UPGRIS Community Service Centre carried out over approximately 3 months equivalent to 10 credit points 1. Students must register with their department to participate in the UPGRIS Thematic Community Service Programme (P)

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	2. Students must complete the Course Registration Form (KRS) for the 'Out-of-Programme Study Load' module on the SIMEKAR system, selecting the UPGRIS Thematic Community Service Programme (P) 3. Students carry out the activities in accordance with the instructions of the UPGRIS Thematic Community Service Programme committee (D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors SPADA for the fulfilment of study load requirements outside the degree programme and the course logbook (C)

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
15	8	3425224615	Community Service Program – Inclusive and Exclusive Leadership	2	v							v				UPGRIS Thematic Community Service Programme	"Organised by the UPGRIS KKN Centre carried out over approximately 3 months equivalent to 10 credit points 1. Students must register with their department to participate in the UPGRIS Thematic Community Service Programme (P) 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the UPGRIS Thematic Community Service Programme (P) 3. Students carry out the activities in accordance with the instructions of the UPGRIS Thematic Community Service Programme committee (D)

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C)"
16	8	3425224616	Community Service Program-Non-Formal Education	2	v							v				UPGRIS Thematic Community Service Programme	"Organised by the UPGRIS Community Service Centre carried out over approximately 3 months equivalent to 10 credit points 1. Students must register with their department to participate in the UPGRIS Thematic Community Service Programme (P) 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment

No (1)	Semester (2)	Course Code (3)	Course Title (4)	Credit Points (5)	PLO assigned to the course (6)											Forms of Fulfilment of Study Load Outside the Designated Study Programme (7)	Notes (8)
					PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11		
																	Outside the Study Programme in SIMEKAR, selecting the UPGRIS Thematic Community Service Programme (P) 3. Students carry out the activities in accordance with the instructions of the UPGRIS Thematic Community Service Programme (D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The course lecturer monitors SPADA for the fulfilment of study load requirements outside the degree programme and the course logbook (C)

10.7 Quality Assurance for Activities Outside the Degree Programme

To ensure that the implementation of the policy on Fulfilment of Study Load Outside the Study Programme, specifically the "right to study for three semesters outside the study programme", runs with guaranteed quality, several quality standards must be established, including:

1. Quality of participants' competencies.
2. Quality of implementation.
3. Quality of internal and external supervision processes.
4. Quality of facilities and infrastructure for implementation.
5. Quality of reporting and presentation of results.
6. Quality of assessment

Table 10.6 Quality Assurance of Learning Delivery Outside the Study Programme

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
1.	Teaching Placement	Students must have passed the following modules: 1. Microteaching (grade B). 2. Have completed a minimum of 100 credits	1. Students must register with the programme to participate in the teaching placement (P). 2. Students must register for the Course Registration Form (KRS) for Study Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the Educational Internship (P) activity. 3. Students carry out the activities in accordance with the instructions of the Educational Internship committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			Outside the Study Programme and the Course Logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C). 7. The Assessor for Fulfilment of Study Load Outside the Study Programme conducts an overall evaluation of student outcomes (C)
2.	Work/Industry Placement CoE PMPM	Conducted in semester 7. Minimum grade of B in the following courses: 1. Graphic Design, 2. Videography Techniques	Conducted over 3 months, equivalent to 10 credits. 1. Students must register with the programme to participate in the CoE PMPM work placement/industrial placement (P). 2. Students must register for the Course Registration Form (KRS) for Study Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the CoE PMPM Work/Industry Placement (P) activity. 3. Students carry out activities in accordance with the instructions of the CoE PMPM work/industrial placement committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C). 7. The Assessor for Fulfilment of Study Load Outside the Study Programme conducts an overall evaluation of student outcomes (C)
3	Work/Industry Placement: CoE Young Programmer	Conducted in semester 7. Minimum grade of B in the following courses: 1. Algorithms and Programming	Conducted over 3 months, equivalent to 10 credits. 1. Students must register with the programme to participate in the Young

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
		Fundamentals, 2. Object-Oriented Programming, 3. Data Structures, 4. Database Systems, 5. Systems Analysis and Design	Programmers CoE work placement/industrial placement (P). 2. Students must register for the Course Registration Form (KRS) for Study Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the CoE Young Programmer (P) work placement/industrial placement activity. 3. Students carry out activities in accordance with the instructions of the Young Programmer CoE work placement/industrial placement committee (D). 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D). 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C). 6. The Internship Supervisor monitors the outcomes of the student interns (C). 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
4	Academic Future Teacher (AFT)	This activity is intended for final-year students (from semester 7 onwards)	Conducted over 1 semester, equivalent to 20 credits 1. Students must register with their programme to participate in the Academic Future Teacher (AFT) activity (P) 2. Students must register for the 'Course Load Fulfilment Outside the Study Programme' module in SIMEKAR, selecting the Academic Future Teacher (AFT)(P) activity 3. Students carry out the activities in accordance with the instructions of the Academic Future Teacher (AFT) committee (D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for fulfilment of study load outside the degree programme and the course logbook (C) 6. The supervising lecturer monitors student outcomes (C)

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
5	SEA TEACHER	Students may participate in this activity from Semester 7	Organised by SEAMEO under the coordination of UPT KUI, it runs for approximately 1 month and is equivalent to 10 credits. 1. Students must register with their programme to participate in the SEA TEACHER(P) activity 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the SEA TEACHER(P) activity 3. Students carry out activities in accordance with the instructions of the SEA TEACHER committee (D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The course lecturer monitors SPADA for the fulfilment of study load requirements outside the degree programme and the course logbook (C) 6. The supervising lecturer monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
6	International Community Service Placement	Students may participate in this activity from Semester 5	Organised by the UPT KUI UPGRIS, it lasts approximately 1 month and is equivalent to 10 credits 1. Students must register with their department to participate in the International Community Service Programme (P) 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the International Community Service Programme (P) 3. Students carry out the activities in accordance with the instructions of the

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			International PPL KKN committee (D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The supervising lecturer monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
7	Merdeka Student Exchange (PMM)	Requirements in accordance with the updated programme from the Ministry of Education, Culture, Research and Technology courses must have the same CLO as the study programme minimum of 6th-semester students	The Kemdikbud Ristek programme runs for a full semester. The host institution must be a university located on a different island. The number of credits transferred corresponds to the courses taken by the student at the host university 1. Students must register with their programme to participate in the PMM(P) activity 2. Students must complete the Course Registration Form (KRS) for Course Load Fulfilment Outside the Programme of Study in SIMEKAR, specifying the PMM(P) activity 3. Students carry out the activities in accordance with the instructions of the PMM(D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The Assessor for Fulfilment of Study Load Outside the Study Programme conducts an overall evaluation of student outcomes (C)

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
8	PURWAKA	student exchange activities organised independently by the programme, faculty, or university	These activities must be recorded in the http://bursakmm.lldikti6.id. Conducted over a full semester and converted according to the courses taken by the student. 1. Students must register with their programme to participate in the PURWAKA(P) activity 2. Students must complete the Course Registration Form for Study Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the PURWAKA(P) activity 3. Students carry out the activities in accordance with the instructions of the PURWAKA(D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
9	Student exchange between study programmes within UPGRIS	Conducted for fifth-semester students	Courses taken in other programmes within UPGRIS 1. Students must register with their programme to participate in the Inter-programme Student Exchange within UPGRIS (P) 2. Students must complete the Course Registration Form for Study Load Fulfilment Outside the Programme of Study in SIMEKAR, selecting the Inter-departmental Student Exchange Programme within UPGRIS (P) 3. Students carry out the activities in accordance with the instructions of the Inter-departmental Student Exchange Committee within UPGRIS (D) 4. Students complete the requirements appearing in SIMEKAR: course

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
10	Credit Transfer	carried out from at least the 6th semester	Organised by the UPT KUI and carried out over 1 semester. Credit conversion follows the courses taken by students at the host institution. 1. Students must register with their programme to participate in the Credit Transfer (P) scheme 2. Students must complete the Course Registration Form (KRS) for Course Load Fulfilment Outside the Programme of Study in SIMEKAR, selecting the Credit Transfer (P) option 3. Students carry out the activities in accordance with the Credit Transfer Committee's instructions (D) 4. Students complete the requirements appearing in SIMEKAR: course logbook, daily activity records, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for Course Load Fulfilment Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
11	Certified Internship	The activity is undertaken by students from Semester 5 onwards.	Organised by the Ministry of Education, Culture, Research and Technology and conducted over a full semester; equivalent to 20 credits 1. Students must register with their programme to participate in the certified internship (P)

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			2. Students must register for the Course Registration Form (KRS) for Study Load Fulfilment Outside the Degree Programme in SIMEKAR, selecting the certified internship option (P) 3. Students carry out activities in accordance with the instructions of the certified internship committee (D) 4. Students complete the requirements appearing in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The Internship Supervisor monitors the outcomes of the student interns (C) 7. The assessor for the fulfilment of learning load outside the study programme conducts an overall evaluation of student outcomes (C)
12	Fulfilment of Study Load Outside the BRIN Programme	This activity is only open to students in at least their 6th semester.	It is conducted over one full semester, equivalent to 20 credits. 1. Students must register with their programme to participate in the BRIN(P) Course Load Fulfilment Outside the Study Programme 2. Students must register for the Course Registration Form (KRS) for the 'Fulfillment of Study Load Outside the BRIN Programme' via SIMEKAR, selecting the 'Fulfillment of Study Load Outside the BRIN Programme (P)' activity 3. Students carry out the activities in accordance with the instructions of the BRIN(D) Programme-External Course Load Fulfilment Committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The course lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C)

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			7. The assessor for the Fulfilment of Study Load Outside the Study Programme conducts an overall evaluation of student outcomes (C)
13	MAHARDEKA	The activity is attended by students from Semester 6 onwards.	Organised by LLDIKTI VI. Conducted over one full semester, equivalent to 20 credits. 1. Students must register with their department to participate in the MAHARDEKA(P) 2. Students must register for the Course Registration Form (KRS) for Study Load Fulfilment Outside the Programme of Study in SIMEKAR, selecting the MAHARDEKA(P) activity 3. Students carry out the activities in accordance with the instructions of the MAHARDEKA(D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
14	Independent Entrepreneurship	Students may participate in this activity from the third semester onwards.	Conducted over 1 semester, equivalent to 20 credits 1. Students must register with their programme to participate in the Independent Entrepreneurship (P) activity 2. Students must select the 'Course Load Fulfilment Outside the Study Programme' module in SIMEKAR, specifying the Independent Entrepreneurship (P) programme 3. Students carry out the activities in accordance with the instructions of the Independent Entrepreneurship committee (D)

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for fulfilment of study load outside the degree programme and the course logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
15	P2MW (Student Entrepreneurship Development Programme)	Conducted in semester 6; if undertaken before semester 6, it will be converted to a free-form format in accordance with BELMAWA's schedule	Conversion if 7 credits are passed; if reaching the EXPO, 3 credits will be added 1. Students must register with their department to participate in the P2MW(P) programme 2. Students must register for the Course Registration Form (KRS) for Study Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the P2MW(P) activity 3. Students carry out the activities in accordance with the instructions of the P2MW(D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
16	INDEPENDENCE	Students may participate from the 6th semester	Organised by LLDIKTI VI Conducted over one semester, equivalent to 20 credits. 1. Students must register with their department to participate in the BERDIKARI(P) programme

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			2. Students must complete the Course Registration Form (KRS) for Coursework Outside the Programme of Study in SIMEKAR, selecting the BERDIKARI(P) activity 3. Students carry out the activities in accordance with the instructions of the BERDIKARI(D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an evaluation of the student's overall outcomes (C)
17	Certified Independent Study Placement (MSIB)	The activity is open to students from Semester 6	Conducted over a full semester, equivalent to 20 credits 1. Students must register with their programme to participate in the Certified Independent Study (MSIB)(P) 2. Students must register for the Course Registration Form (KRS) for Coursework Outside the Degree Programme in SIMEKAR, selecting the Certified Independent Study (MSIB)(P) programme 3. Students carry out activities in accordance with the instructions of the Certified Independent Study Committee (MSIB) (D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for fulfilment of the study load outside the degree programme and the course logbook (C) 6. The supervising lecturer monitors student outcomes (C) 7. The Assessor for Fulfilment of Study Load Outside the Study Programme

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			conducts an overall evaluation of student outcomes (C)
18	KABARI	The activity is open to students from Semester 6 onwards	Conducted over a full semester, equivalent to 20 credits 1. Students must register with their programme to participate in the KABARI(P) activity 2. Students must select the 'Course Load Fulfilment Outside the Study Programme' module in SIMEKAR, specifying the KABARI(P) activity 3. Students carry out the activities in accordance with the instructions of the KABARI(D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
19	UPGRIS Thematic Community Service Programme	The activity is open to students from Semester 6 onwards	Organised by the UPGRIS Community Service Centre. Conducted over approximately 3 months, equivalent to 10 credits. 1. Students must register with their department to participate in the UPGRIS Thematic Community Service Programme (P) 2. Students must register for the 'Course Load Fulfilment Outside the Study Programme' module in SIMEKAR, selecting the UPGRIS Thematic Community Service Programme (P) 3. Students carry out the activities in accordance with the instructions of the UPGRIS Thematic Community Service Programme committee (D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The supervising lecturer monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
20	MANGUNSARI	The activity is open to students from Semester 6 onwards	Organised by LLDIKTI VI Conducted over a full semester, equivalent to 20 credits 1. Students must register with their department to participate in the MANGUNSARI(P) programme 2. Students must register for the Course Registration Form (KRS) for Study Load Fulfilment Outside the Programme of Study in SIMEKAR, selecting the MANGUNSARI(P) activity 3. Students carry out the activities in accordance with the instructions of the MANGUNSARI(D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
21	MAHESA	Activities are open to students from Semester 6 onwards	Programme under the Vice-Chancellor 3 Held over 3 weeks, equivalent to 7 credits 1. Students must register with their department to participate in the MAHESA(P) programme

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			2. Students must register for the 'Course Load Fulfilment Outside the Programme' module in SIMEKAR, selecting the MAHESA(P) activity 3. Students carry out the activities in accordance with the instructions of the MAHESA(D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
22	International Community Service	The activity is open to students from Semester 6 onwards	Organised by the UPT KUI The programme runs for a full week at the location Conversion: 4 credits. 1. Students must register with their department to participate in the International Community Service Programme (P) 2. Students must register for the 'Course Load Fulfilment Outside the Study Programme' module in SIMEKAR, selecting the International Community Service Programme (P) 3. Students carry out the activities in accordance with the instructions of the International Community Service (KKN) committee (D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The supervising lecturer monitors student outcomes (C)

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
23	Lecturer Community Service	attended by active students in semester 7; those below semester 7 receive a free form	Community service funded by DTRM and LPPM converted to 6 credits. 1. Students must register with their department to participate in the lecturer's community service (P) 2. Students must complete the Course Registration Form for Academic Workload Outside the Programme of Study in SIMEKAR, selecting the faculty service activity (P) 3. Students carry out the activities in accordance with the instructions of the faculty community service committee (D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity records, critical analysis, etc. (D) 5. The course lecturer monitors the SPADA system for the fulfilment of study load requirements outside the degree programme and the course logbook (C) 6. The Academic Tutor monitors student outcomes (C) 7. The assessor for the fulfilment of study load requirements outside the degree programme conducts an overall evaluation of student outcomes (C)
24	Student Organisation Activities	Students may participate in activities from Semester 7 onwards; those in earlier semesters may participate in free-form activities	If students secure funding, they receive a conversion of 7 credits If they pass the ABDIDAYA ORMAWA assessment, they receive an additional 3 credits 1. Students must register with their department to participate in the PPK Ormawa(P) activity 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the PPK Ormawa(P) activity

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			3. Students carry out the activity in accordance with the instructions of the PPK Ormawa(D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for fulfilment of the study load outside the study programme and the course logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
25	BKP HUMANITARIAN PROJECT	The activity is open to students from Semester 6 onwards	Conducted over one full semester, equivalent to 20 credits 1. Students must register with their programme to participate in the HUMANITARIAN PROJECT BKP activity (P) 2. Students must register for the Course Registration Form (KRS) for Study Load Fulfilment Outside the Programme of Study in SIMEKAR, selecting the BKP HUMANITARIAN PROJECT (D) activity 4. Students complete the requirements appearing in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for fulfilment of study load outside the study programme and the course logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The Assessor for Fulfilment of Study Load Outside the Study Programme conducts an evaluation of the student's overall outcomes (C)
26	KENARI	The activity is attended by final-year students (from semester 7 onwards)	Research is conducted over a full semester conversion of 20 credits. 1. Students must register with their department to participate in the KENARI(P) programme

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			2. Students must select the 'Course Load Fulfilment Outside the Study Programme' module in SIMEKAR, specifying the KENARI(P) activity 3. Students carry out the activity in accordance with the instructions of the KENARI(D) committee 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The academic supervisor monitors student outcomes (C) 7. The assessor for the fulfilment of study load outside the study programme conducts an overall evaluation of student outcomes (C)
27	Lecturer Research	participated in by active students in semester 7; those below semester 7 receive a free form	Students become members of the lecturer's research. Conversion of 6 credits. 1. Students must register with their department to participate in the Faculty Research (P) activity 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the Faculty Research (P) activity 3. Students carry out the activities in accordance with the instructions of the Faculty Research Committee (D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The Internship Supervisor monitors student outcomes (C) 7. The Assessor for Fulfilment of Study Load Outside the Study Programme

No	Forms of Fulfilment of Study Load Outside the Study Programme	Requirements	Notes
(1)	(2)	(3)	(4)
			conducts an overall evaluation of student outcomes (C)
28	Research-based Student Creativity Programmes (PKM RSH and PKM RE)	Student activities in semester 7 are converted into course credits; however, if the activity takes place before semester 7, it is treated as a free-form activity	If a student secures funding, they receive 7 credits If they qualify for PIMNAS, they receive an additional 3 credits 1. Students must register with their department to participate in the PKM Research activities (PKM RSH and PKM RE)(P) 2. Students must register for the Course Registration Form (KRS) for Academic Load Fulfilment Outside the Study Programme in SIMEKAR, selecting the PKM Research (PKM RSH and PKM RE) activity (P) 3. Students carry out the activities in accordance with the instructions of the PKM Research committee (PKM RSH and PKM RE)(D) 4. Students complete the forms that appear in SIMEKAR: course logbook, daily activity log, critical analysis, etc. (D) 5. The supervising lecturer monitors the SPADA for the Fulfilment of Study Load Outside the Study Programme and the Course Logbook (C) 6. The PKM Supervisor monitors the students' PKM outputs (C) 7. Assessors for the Fulfilment of Study Load Outside the Study Programme conduct an overall evaluation of student outputs (C)

11. Quality Assurance

11.1 Quality Control Courses

The quality of both the learning process and its outcomes must be ensured through control over various aspects of implementation, including specific stages or steps within the learning process. Consequently, minimum activity outcomes are established for the delivery of lectures through courses within a group known as Quality Control Courses for each Study Programme. The minimum results that students must achieve for their participation in the course must be equal to or higher than a B grade. Study Programmes may list Quality Control Courses in Table 12.1.

Table 12.1. Quality Control Course

Quality Control Course for All Students in the Information Technology Education Programme

No	Course Code	Course	Credit
1	3425332629	Algorithms and Computer Programming	3
2	3425331630	Computational Mathematics	3
3	3425321631	Digital Data Processing	2
4	3425332632	Graphic Design	3
5	3425332633	Videography Techniques	3
6	3425331634	Data Structures	3
7	3425321635	Data Communication	2
8	3425332636	Object-Oriented Programming	3
9	3425332637	Operating System	3
10	3425332639	Database Systems	3
11	3425332640	User Interface Design	3
12	3425332641	Computer Networks	3
13	3425331642	English for IT	2
14	3425332643	Animation Technology	2
15	3425332644	Systems Analysis and Design	3
16	3425332645	Game Programming	3
17	3425334646	Field Study	3
18	3425321647	Statistics	2
19	3425332648	Computer Network Management	3
20	3425331650	Information Technology Research Methodology	3
21	3425332651	Mobile Application Programming	3
22	3425332652	Server Operating Systems	3
23	3425332653	Information Systems	3
24	3425331654	IT Project Management	3
25	3425333655	Information Technology Proposal Seminar	3
26	3425332656	Cybersecurity	3

No	Course Code	Course	Credit
27	3425332657	Artificial Intelligence	3
28	3425765614	Final Project	6
		Total credits	**82**

Quality Control Course for the Field of Study/Competency/Knowledge Cluster in Education

No	Course Code	Course	Credit
1	3425321622	Foundations of Education	2
2	3425321623	Professional Ethics in Education	2
3	3425321624	Student Development	2
4	3425321625	Learning Planning	2
5	3425321628	e-Learning	2
6	3425331642	English for IT	2
7	3425321626	Computer Science Education	2
8	3425321627	Evaluation of Learning Process and Outcomes	2
9	3425322617	Microteaching	2
10	3425324618	Internship-Curriculum Analysis	2
11	3425324619	Internship-Lesson Plan Development	2
12	3425324620	Internship-Learning Media Development	2
13	3425344621	Internship-Teaching Practice	4
14	3425324618	Community Service Program-Digital Literacy	2
15	3425324619	Community Service Program – Problem Solving in the Community	4
16	3425324620	Community Service Program – Inclusive and Exclusive Leadership	2
17	3425344621	Community Service Program – Non-Formal Education	2
		Total Credits	**38**

Quality Control Course for the Field of Study/Competency/Software Engineering Cluster

No	Course Code	Course	Credit
1	3425332629	Algorithms and Computer Programming	3
2	3425331634	Data Structures	3
3	3425332636	Object-Oriented Programming	3
4	3425332639	Database Systems	3
5	3425332644	System Analysis and Design	3
6	3425332653	Information Systems	3
7	3425332657	Artificial Intelligence	3
		Total credits	**21**

Quality Control Course for the Animation and Multimedia Field of Study/Competency/Cluster

No	Course Code	Course	Credit
1	3425332632	Graphic Design	3
2	3425332633	Videography Techniques	3
3	3425332640	User Interface Design	3
4	3425332643	Animation Technology	2
5	3425332645	Game Programming	3
6	3425332651	Mobile Application Programming	3
		Total Credits	**17**

Quality Control Course for the Field of Study/Competency/Computer Networks Cluster

No	Course Code	Course	Credit
1	3425321631	Digital Data Processing	2
2	3425321635	Data Communication	2
3	3425332641	Computer Networks	3
4	3425332648	Computer Network Management	3
5	3425332652	Server Operating Systems	3
6	3425332656	Cybersecurity	3
		Total credits	**16**

Quality Control Course for the Field of Study/Competency/Cluster of Junior Programmers

No	Course Code	Course	Credit
1	3425422658	Big Data	2
2	3425432659	Software Testing	3
3	3425434660	Industrial Work Practice	3
4	3425422661	Software Engineering	2
		Total credits	**10**

Quality Control Course for the Field of Study/Competency/Cluster of Multimedia Learning Material Developers

No	Course Code	Course	Credit
1	3425422662	Interactive Multimedia	2
2	3425432663	2D/3D Animation	3
3	3425422664	Educational Media Projects	2
4	3425434660	Industrial Work Practice	3
		Total Credits	

Quality Control Course for the Field of Study/Competency/Research and Publication Cluster

No	Course Code	Course	Credit
1	3425331642	English for IT	2
2	3425321647	Statistics	2

3	3425331650	Information Technology Research Methodology	3
4	3425333655	Information Technology Proposal Seminar	3
5	3425765614	Final Project	6
		Total credits	**16**

Quality Control Course for Supporting Field of Study/Competency/Knowledge Cluster

No	Course Code	Course	Credit
1	3425334646	Field Study	3
2	3425422665	Decision Support Systems	2
3	3425422666	Digital Forensics	2
4	3425432667	Augmented Reality System	3
5	3425432668	Data Mining	3
		Total credits	**13**

11.2 Course Prerequisites

The programme must map courses based on the relationships between them so that students can more easily plan their studies. By viewing this course structure, students are encouraged to take each course seriously as they are linked to subsequent courses. The programme can enter Prerequisite Courses in Table 12.2.

Table 12.2. Prerequisite Courses

No	Course Code	Course	Prerequisite for			
			Requirements	Semester	Course Code	Course
1	3425221611	English	L	III	3425331642	English for IT
2	3425121607	Pancasila Education				
3	3425121609	Indonesian Language	L		3425333655	Information Technology Proposal Seminar
4	3425321622	Foundations of Education	L	II	3425321624	Student Development
5	3425332629	Algorithms and Computer Programming	L	II	3425332636	Object-Oriented Programming
6	3425331630	Computational Mathematics	B	I	3425321631	Digital Data Processing
7	3425321631	Digital Data Processing	L	II	3425321635	Data Communication
8	3425332632	Graphic Design	L	II	3425332633	Videography Techniques
9	3425321623	Professional Ethics in Education	L	III	3425321628	e-Learning
10	3425121601	Islamic Religious Education				
11	3425121602	Christian Religious Education				

No	Course Code	Course	Prerequisite for			
			Requirements	Semester	Course Code	Course
12	3425121603	Catholic Religious Education				
13	3425121604	Hindu Religious Education				
14	3425121605	Buddhist Religious Education				
15	3425121606	Confucian Religious Education				
16	3425121608	Civics Education				
17	3425221610	PGRI Studies				
18	3425321624	Student Development	L	III	3425321625	Learning Planning
19	3425332633	Videography Techniques	L	III	3425332643	Animation Technology
20	3425331634	Data Structures	L	III	3425332639	Database Systems
21	3425321635	Data Communication	L	III	3425332641	Computer Networks
22	3425332636	Object-Oriented Programming	L	III	3425332640	User Interface Design
23	3425321625	Learning Planning	L	IV	3425321626	Computer Science Learning
24	3425321628	e-Learning	L	IV	3425321626	Computer Science Learning
25	3425332637	Operating System	L	III	3425332641	Computer Networks
26	3425332639	Database Systems	L	IV	3425332644	System Analysis and Design
27	3425332640	User Interface Design	L	IV	3425332645	Game Programming
28	3425332641	Computer Networks	L	IV	3425332648	Computer Network Management
29	3425331642	English for IT				
30	3425332643	Animation Technology	L	IV	3425332645	Game Programming
31	3425321626	Computer Science Learning	L	V	3425321627	Evaluation of Learning Process and Outcomes
32	3425332644	System Analysis and Design	L	V	3425332653	Information Systems
			L	VII	3425432668	Data Mining
33	3425332645	Game Programming	L	V	3425332651	Mobile Application Programming
34	3425334646	Field Study	L	VIII	3425765614	Final Project
35	3425321647	Statistics	L	V	3425331650	Information Technology Research Methodology
36	3425332648	Computer Network Management	L	V	3425332652	Server Operating Systems

No	Course Code	Course	Prerequisite for			
			Requirements	Semester	Course Code	Course
37	3425331650	Information Technology Research Methodology	L	VIII	3425765614	Final Project
38	3425332651	Mobile Application Programming	L	VI	3425332657	Artificial Intelligence
39	3425332652	Server Operating Systems	L	VI	3425332656	Cybersecurity
40	3425332653	Information Systems	L	VI	3425332654	Information Technology Project Management
41	3425321627	Evaluation of Learning Process and Outcomes	L	VI	3425322617	Microteaching
42	3425322617	Microteaching	L	VII	3425324618	Internship-Curriculum Analysis
			L	VII	3425324619	Internship-Lesson Plan Development
			L	VII	3425324620	Internship-Learning Media Development
			L	VII	3425344621	Internship-Teaching Practice
43	3425332654	Information Technology Project Management	L	VIII	3425434660	Industrial Work Practice
			L	VIII	3425422665	Decision Support Systems
44	3425333655	Information Technology Proposal Seminar	L	VIII	3425765614	Final Project
45	3425332656	Cybersecurity	L	VII	3425422666	Digital Forensics
46	3425332657	Artificial Intelligence	L	VII	3425432667	Augmented Reality System
47	3425241612	Technology-Based Entrepreneurship	L	VI	3425332654	Information Technology Project Management
48	3425324618	Internship-Curriculum Analysis				
49	3425324619	Internship-Lesson Plan Development				
50	3425324620	Internship-Learning Media Development				
51	3425344621	Internship-Teaching Practice				
52	3425422658	Big Data	B	VII	3425432659	Software Testing
53	3425432659	Software Testing	B	VII	3425422658	Big Data
54	3425434660	Industrial Work Practice				
55	3425422661	Software Engineering	B	VII	3425432659	Software Testing
56	3425422662	Interactive Multimedia	B	VII	3425432663	2D/3D Animation

No	Course Code	Course	Prerequisite for			
			Requirements	Semester	Course Code	Course
57	3425432663	2D/3D Animation	B	VII	3425422662	Interactive Multimedia
58	3425422664	Educational Media Project	B	VII	3425432663	2D/3D Animation
59	3425422665	Decision Support Systems				
60	3425422666	Digital Forensics	B	VII	3425432667	Augmented Reality System
61	3425432667	Augmented Reality System	B	VII	3425432668	Data Mining
62	3425432668	Data Mining	B	VII	3425432667	Augmented Reality System
63	3425224613	Community Service Program – Digital Literacy				
64	3425244614	Community Service Program – Problem Solving in the Community				
65	3425224615	Community Service Program – Inclusive and Exclusive Leadership				
66	3425224616	Community Service Program – Non-Formal Education				
67	3425765614	Final Project				

Notes: L = Passed, PT = Previously Taken, B = Joint, meaning taken jointly with a prerequisite course, L(B) = Passed with a minimum grade of B with a specified field of study.

12. Learning Management

Table 12.1 Learning Management in the Study Programme

No	Activity	Officer
1	Person responsible for curriculum development	Head of the study programme
2	Person in Charge of Course Materials (RPS, RAE and RT) for Courses in the Curriculum	Programme Secretary
3	PIC for monitoring and evaluation of curriculum implementation (referring to learning materials) ● Checking the alignment of questions with CLO and/or PLO	Programme Quality Assurance Sub-unit

	• Checking the duration of assessments against the course credit weight	
4	PIC for monitoring and evaluation of the implementation of the Fulfilment of Study Load Outside the Study Programme • Verification of the duration of activities for the Fulfilment of Study Load Outside the Study Programme • Review of the alignment of acquired competencies with PLO • Verification of the alignment of assessment formats and techniques with PLO • Review of guidelines for students, field supervisors, and programme supervisors	Coordinator for the Fulfilment of Learning Load Outside the Study Programme study programme
5	PIC for monitoring and evaluating PLO achievement, as well as reporting on PLO achievement	Coordinator for the Fulfilment of Study Load Outside the Study Programme degree programme

13. Admission Procedures for Students at Various Stages of the Curriculum

The selection process for new student admissions at UPGRIS can be conducted through the following pathways.

1. Merit-Based Pathway

   The Merit-Based Pathway is open to high school students or equivalent who have graduated or are due to graduate in the current academic year, or who were declared to have graduated no more than two years previously, provided they meet specific academic criteria in accordance with applicable regulations.

2. Regular Track

   The Regular Track is open to high school graduates or equivalent who have graduated or are due to graduate in the current year, or who were declared to have graduated no more than two years previously, through a selection process based on a computer-based test (CBT) and a personality test

3. Kartu Indonesia Pintar (KIP) Track

   The Regular Pathway is open to high school graduates or equivalent who have graduated or are due to graduate in the current academic year; it is intended for prospective students from low-income families, as verified by a means-test and in accordance with applicable

regulations. This pathway is derived from the government's 100% tuition fee assistance programme, which is provided to students meeting specific criteria.

4. Employee Pathway

   The Employee Pathway is specifically open to employees who wish to continue their studies whilst working. This pathway offers flexibility in the lecture schedule.

5. RPL Pathway

   The RPL Pathway is open to prospective students who already have a track record of prior learning, whether formal or non-formal. This prior learning record may consist of: 1) Formal education (from Diploma 1 to Bachelor's degree) evidenced by a diploma; 2) Non-formal education (training/courses) meeting specific criteria evidenced by a certificate; 3) Work experience as a practitioner meeting specific criteria evidenced by a recognised letter of employment, which is converted into a specific number of credit points.

13.1 Application Options

Registration options for new student admissions at UPGRIS consist of offline registration and online registration.

1. Offline Registration

   Offline registration is the registration and selection of new students conducted in person on campus. A one-day service is available, meaning registration, testing, and results are completed in a single day by registering directly at the UPGRIS Admissions Office, 2nd Floor, Central Building, Jalan Sidodadi Timur No. 24, Semarang.

2. Online Registration

   Online registration is the process of registering and selecting new students conducted online via the website pmb.upgris.ac.id.

13.2 New Student Admission Procedures

1. Merit and Regular Streams
   a. Fill in the registration form on the UPGRIS PMB website.
   b. Print the registration form.
   c. Make a payment of Rp 250,000.00 at Bank BRI, Bank Mandiri, or Bank Jateng by presenting your Registration PIN.
   d. Print the registration card from the UPGRIS PMB website.
   e. Take the UPGRIS entrance test/exam according to the designated track.

f. Check the announcement on the UPGRIS PMB website (within a maximum of 3 days after making the payment).

2. KIP Kuliah Pathway

a. Register on the website pmb.upgris.ac.id by selecting the regular pathway under the KIP group, and complete the required data fields.

b. Pay the registration fee of Rp. 250,000 (if accepted through the KIP selection process, the registration fee will be refunded).

c. Synchronise your data by bringing the relevant documents (KIP registration form and card, UPGRIS registration form and card, KIP, KKS, PKH, SKTM, or other supporting cards from government programmes that you hold).

d. Take the CBT test and attend the interview at the UPGRIS main campus, 2nd Floor, Central Building, Jalan Sidodadi Timur No. 24, Semarang. Services are available Monday to Saturday from 07:30 to 12:00 WIB.

e. Wait for the home visit schedule to be arranged by the UPGRIS team, which will be confirmed via WhatsApp.

f. Once the selection stages have been completed, check the announcements on the website pmb.upgris.ac.id under the 'Announcements' menu by entering your registration number and date of birth.

3. Employee and RPL Classes

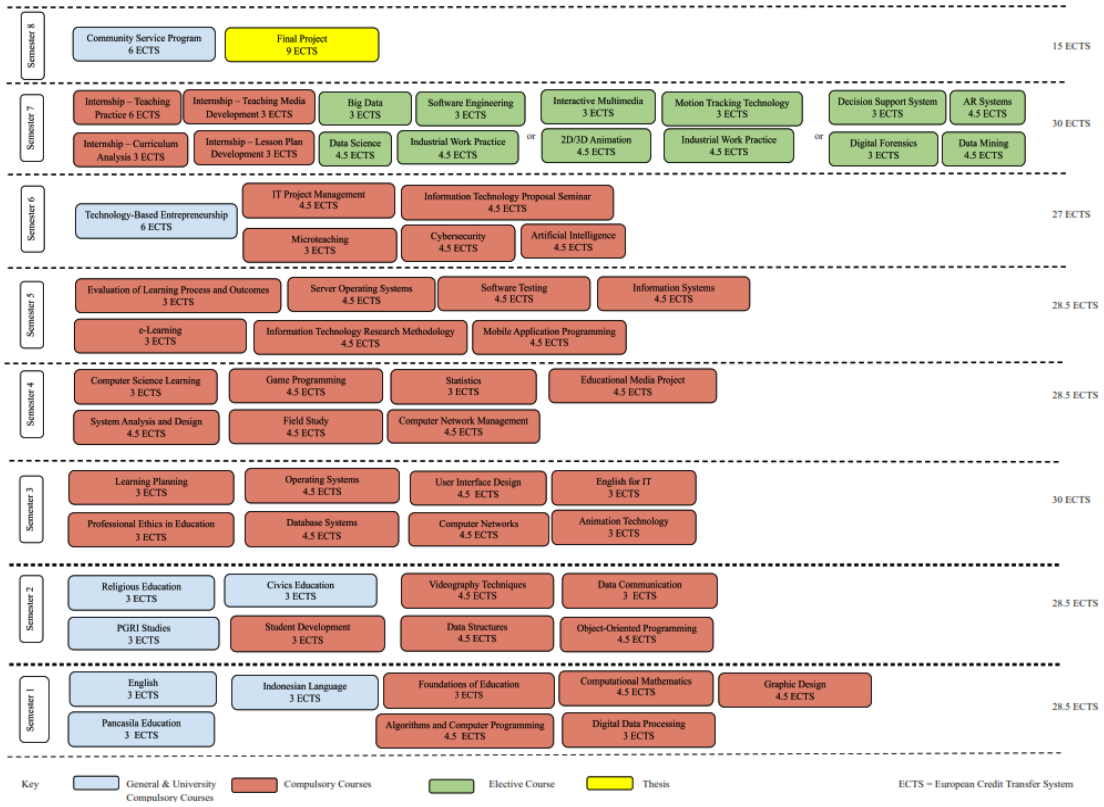
a. Come in person to register at the UPGRIS Admissions Office, 2nd Floor, Central Building, Jalan Sidodadi Timur No. 24, Semarang.

b. If the quota has not been met, prospective students will be placed on a waiting list to join the employee class programme.

14. CLOSING

The curriculum of the Information Technology Education Study Programme has been designed as a framework for delivering high-quality, relevant, and adaptive education in response to advancements in science, technology, and societal needs. This curriculum is intended to produce graduates who are competent, of integrity, and ready to contribute to the advancement of information technology education in Indonesia.

The implementation of the curriculum requires the commitment and synergy of the entire academic community, as well as support from various stakeholders. The learning process is designed to be effective, innovative, and meaningful for students. Evaluation and refinement of the curriculum will be carried out periodically to ensure improvements in the quality of education and the achievement of the desired graduate profile.

Overview

	Credit Points	Semester							
		1	2	3	4	5	6	7	8
University Course	30.00	9	9	0	0	0	6	0	6
Compulsory Course	162.00	19.5	19.5	30	28.5	28.5	21	15	0
Elective Course	15.00	0	0	0	0	0	0	15	0
Final Project and Internship	9.00	0	0	0	0	0	0	0	9
Total ECTS Credit Points	**216.00**	**28.50**	**28.50**	**30.00**	**28.50**	**28.50**	**27.00**	**30.00**	**15.00**