Module Description

Module name	Computer Graphics
Module level, if applicable	Bachelor of Informatics
Code, if applicable	419D4233
Subtitle, if applicable	-
Course, if applicable	
Semester(s) in which the module is taught	6th
Person responsible for the module	**Dr. Ir. Ingrid Nurtanio, MT.**
Lecturer	1. Dr. Ir. Ingrid Nurtanio, MT. 2. A. Ais Prayogi, ST. M.Eng
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is an elective course and is offered starting from the 6th semester.
Type of teaching, contact hours	Teaching methods: [group discussion], [case study], [collaborative learning], [problem-based learning]. Teaching forms: [lecture] CH : 8.00 - 16.00
Workload	For this course, students are required to meet a minimum of 136.00 hours in one semester, which consist of: - 40.00 hours for lecture, - 48.00 hours for structured assignments, - 48.00 hours for private study
Credit points	3 credit points (equivalent with 5.1 ECTS)

Requirements according to the examination regulations	Students must have attended all minimum 80% of classes and submitted all class assignments that are scheduled before the final tests.
Recommended prerequisites	Algorithm and Data Structure, Basics of Multimedia,
Module objectives/intended learning outcomes	**Intended Learning Outcomes (ILO):** **ILO 2:** Have the knowledge of advanced topics in an Informatics specific fields of either Artificial Intelligence, Data Science, Computer Network, Cloud Computing or Internet of Things. **ILO 3:** Apply the knowledge of computing and other related disciplines to analyze and identify solutions for any computing-based problem. **Course Learning Objective (CLO):** After completing this course should be able to understand computer graphics concept including 2D and 3D graphic geometry and transformation, and able to develop graphics application based on OpenGL. ILO 2 → CLO 1: Students able to understand 2D and 3D graphics concepts ILO 3 → CLO 2: Students can develop graphic application based on OpenGL
Content	Students will learn about : 1. 2D Geometry and Transformation 2. 3D Geometry and Transformation 3. OpenGL Programming Concepts: a. Graphics pipeline b. Rendering c. Time Base Rendering
Forms of Assessment	Assessment techniques: [observation], [participation], [written-test].

	Assessment forms: [midterm exam], [assignment] CLO 1 => ILO 2: 25% (Midterm Exam: written test) and 25% (Assignment1: participation) CLO 2 => ILO 3: 25% (Assignment2: participation) and 25% (Assignment3: participation)
Study and examination requirements and forms of examination	**Study and examination requirements:** - Students must attend 15 minutes before the class starts. - Students must switch off all electronic devices. - Students must inform the lecturer if they will not attend the class due to sickness, etc. - Students must submit all class assignments before the deadline. - Students must attend the exam to get final grade. **Form of examination:** Written exam: Essay and Practicum
Media employed	Video Conference, Video, and PowerPoint Presentation.
Reading list	**Main :** Eck, David J. 2021. "Introduction to Computer Graphics". Hobart & William OpenGL Documentation, https://www.khronos.org/registry/OpenGL-Refpages/ Learn OpenGL, https://learnopengl.com/ **Support :** Edward Angel, 2006, 'Interactive Computer Graphics', 4thed, Addison Wesley, New York