Description of Course Unit

Course unit title	Algorithm Programming
Course unit code	IT081307
Type of course unit (compulsory, optional)	Compulsory
Level of course unit (according to EQF: first cycle Bachelor, second cycle Master)	First cycle bachelor
Year of study when the course unit is delivered (if applicable)	First year
Semester/trimester when the course unit is delivered	First semester
Number of ECTS credits allocated	4.8
Name of lecturer(s)	-
Learning outcomes of the course unit	1. Students are able to develop ICT-based multimedia communication applications in diverse cultural contexts. 2. Students are able to use visual merchandising techniques to increase interest in product offerings, apply display techniques to attract customers and increase sales potential 3. Students are able to create learning simulations 4. Students are able to make simple games 5. Students are able to create computer graphic designs for multimedia needs for application in communication science technology
Mode of delivery (face-to-face, distance learning)	Hybrid learning
Prerequisites and co-requisites (if applicable)	-
Course content	1. Understanding algorithms and programming languages, flow charts and and Multimedia Development Life Cycle (MDLC) 2. Introduction to Scratch Programming, interfaces and objects in Scratch 3. Motion, Looks, Pen in Scratch and GIMP App 4. Sound in Scratch and Audacity App 5. Control and Sensing in Scratch 6. Operator, Variable, and List in Scratch 7. Simple games app in Scratch 8. Introduction to Processing Programming 9. Coordinate, Variable, and Conditional in Processing 10. Iteration and Function in Processing 11. Object, Class, and Array in Processing 12. Translation and Rotation in Processing

	13. Image, Video, Text, and Sound in Processing 14. Simple games in Processing
Recommended or required reading and other learning resources/tools	1. Computer Algorithms: introduction to design and analysis. 2nd ed., Sara Baase, Reading,Mass: Addison-Wesley Company, 1993 2. https://scratch.mit.edu 3. http://shallwelearn.com/blog/download/ (ebook : Shall We Learn Scratch Programming) 4. http://scratched.gse.harvard.edu/resources/search/results/taxonomy%3A20 5. http://www.cs.sun.ac.za/rw146/doc/#scratch 6. http://learnscratch.org/video-courses/scratch 7. Sweigart, A. (2021). Scratch 3 Programming Playground: Learn to Program by Making Cool Games. United States: No Starch Press. 8. McManus, S. (2019). Scratch Programming in Easy Steps. United Kingdom: In Easy Steps Limited. 9. Modul Pelatihan Scratch, Akhmad Fauzi, Meta Eri Safitri, Universitas Gunadarma 2010 10. Creativities, Technologies, and Media in Music Learning and Teaching: An Oxford Handbook of Music Education, Volume 5. (2018). United States: Oxford University Press. 11. Kuhlman, G. (2019). GIMP for Beginners: First 12 Skills. (n.p.): Independently 12. Noble, M. (2020). Programming Media Art Using Processing: A Beginner's Guide. United States: CRC Press.
Planned learning activities and teaching methods	Collaborative learning, contextualizing, project based learning, self-learning and relating to real life examples and experiences
Language of instruction	English and Bahasa Indonesia
Assessment methods and criteria	Participatory activity, simple games project outcomes, quizzes, mid and final semester exams.

Algorithm Programming Assessment Rubric

Algorithm Programming project on conventional platform.
1. Create stages of making a simple game about mathematical operators on Scratch using the MDLC method
2. Answering written essay questions to test understanding of programming language i.e condition, loop, array, class, function, variable, and list.
3. Design a story line for simple game about mathematical operators on Scratch using the MDLC method on A4 paper

Algorithm Programming project on digital platform.
1. Create simple animation in processing
2. Record the stages of creating a simple animation and upload it on social media platforms and presented

Mid-term test for Algorithm Programming course.
Work on essay questions from the learning material that has been studied

No	Criteria/Grade	80-100	65-79	50-64	40-59	0-39
1	Integration of knowledge	The paper demonstrates that the author fully understands and has applied concepts learned in the course. Concepts are integrated into the writer's own insights. The writer provides concluding remarks that show analysis and synthesis of ideas.	The paper demonstrates that the author, for the most part, understands and has applied concepts learned in the course. Some of the conclusions, however, are not supported in the body of the paper.	The paper demonstrates that the author, to a certain extent, understands and has applied concepts learned in the course.	The paper does not demonstrate that the author has fully understood and applied concepts learned in the course.	The paper demonstrates that the author has little understanding of the course.

2	Topic focus	The topic is focused narrowly enough for the scope of this assignment. A thesis statement provides direction for the paper, either by statement of a position or hypothesis.	The topic is focused but lacks direction. The paper is about a specific topic but the writer has not established a position.	The topic is too broad for the scope of this assignment.	The topic is not clearly defined.	The topic is not relevant with the given instruction.
3	Depth of discussion	In-depth discussion & elaboration in all sections of the paper.	In-depth discussion & elaboration in most sections of the paper.	The writer has omitted pertinent content or content runs-on excessively. Quotations from others outweigh the writer's own ideas excessively.	Cursory discussion in all the sections of the paper or brief discussion in only a few sections.	The discussion is superficial and not academic, with no relevant references.
4	Cohesiveness	Ties together information from all sources. Paper flows from one issue to the next without the need for headings. Author's writing demonstrates an understanding of the relationship among material obtained from all sources.	For the most part, ties together information from all sources. Paper flows with only some disjointedness. Author's writing demonstrates an understanding of the relationship among material obtained from all sources.	Sometimes ties Together information from all sources. Paper does not flow - disjointedness is apparent. Author's writing does not demonstrate an understanding of the relationship among material obtained from all sources.	Does not tie Together information. Paper does not flow and appears to be created from disparate issues. Headings are necessary to link concepts. Writing does not demonstrate understanding any relationships	The writing is highly problematic and difficult to understand.

5	Spelling & grammar	No spelling &/or grammar mistakes.	minimal spelling or grammar mistakes	noticeable spelling or grammar mistakes	Unacceptable number of spelling and/or grammar mistakes.	the mistakes are so severe that makes it hardly possible to understand.