LEARNING PLAN SEMESTER
MATHEMATICS DEPARTMENT
FACULTY OF MATHEMATICS AND NATURAL SCIENCES

Course Name	**:** Mathematics Learning Media	**Semester :** V	**Workload : 3 SKS**	**Code Course :** MAT1.61.5201
Programme Study	**: Mathematics Education**	**Lecturer:** **Lecturer Team**		
Faculty	**: Mathematics and Natural Sciences**			

Programme Learning Outcomes (PLO)

PLO 2	:	Able to design innovative learning based on the concept of mathematics education and learning
PLO 3	:	Able to design mathematics learning media, both manipulative learning media and ICT-based learning media
PLO 6	:	Able to produce innovative work, in the fields of education and entrepreneurship
PLO 10	:	Able to show a responsible attitude in their own work and can be given responsibility for the achievement of group works

Course Learning Outcomes (CO)

CO 1	:	Developing mathematics learning media concept about notion of learning media, the role and function of learning media, types of learning media, planning and selection of instructional media, presentation techniques for learning media, and evaluation of instructional media, which is specifically for learning mathematics
CO 2	:	Designing mathematics learning media for primary and secondary education by utilizing the environment and technology
CO 3	:	Presenting mathematics learning media for primary and secondary education
CO 4		Creating mathematics learning media concept which includes activities to design, create, use and evaluate mathematics learning media for primary and secondary education by utilizing the environment and technology
CO 5	:	Showing the responsibility attitude in own works
CO 6	:	Maintaining the responsibility attitude in team works.

Learning Matriks

Week	Sub CO (achievement ability after learning phase)	Reference	Assessment		Form of Learning, Method, Assignment		Score Percentage
			Criteria and Indicator	Form	Lecture	Online	
1	Understand the meaning, purpose, function, and benefits of mathematics learning media (*Sub CO 1*) Able to classify works be mathematics learning media (*Sub CO 8*)	**Topic :** Meaning, purpose, function, and benefits of mathematics learning media **Reference:** [1] - [4]	**Qualitative :** Ability to understand and explain the concept by oral and written communication **Quantitative:** Ability to communicate the concept by written form via paper.	Paper	**Form:** Lecture **Method:** Expository and Group Discussion **Assignments:** Group Paper	**Form:** Online **Method:** Synchronise or Asynchronies of Expository and Group Discussion (via Zoom, Google Meet, e-learning) **Assignment:** Paper	4%
2-4	Understand how to develop mathematics learning media using	**Topic :** Creating mathematics	**Qualitative :** Ability to explain and formulate the objective of concept by oral	Paper	**Form:** Lecture	**Form:** Online **Method:**	6%

	ICT with the Macromedia Flash application *(Sub CO 2)*	learning media with Macromedia Flash **Reference:** [5]	and written communication **Quantitative:** Ability to communicate the concept by written form via paper.		**Method:** Expository and Group Discussion **Assignments:** Group Paper	Synchronise or Asynchronies of Expository and Group Discussion (via Zoom, Google Meet, e-learning) **Assignment:** Paper	
5	Design, create and demonstrate learning media for integer operations with the proton-electron principle *(Sub CO 4)*	**Topic :** Learning media of Integer operation **Reference:** [1] - [4]	**Qualitative :** Ability to understand and design the objective of concept by oral and written communication **Quantitative:** Ability to communicate the concept by written form via paper.	Paper	**Form:** Lecture **Method:** Expository and Group Discussion **Assignments:** Group Paper	**Form:** Online **Method:** Synchronise or Asynchronies of Expository and Group Discussion (via Zoom, Google Meet, e-learning) **Assignment:** Paper	2%
6 - 7	Designing, creating and demonstrating integer operation media using Integer Operation Ruler *(Sub CO 4)*	**Topic :** Advanced, learning media for integer operations **Reference:** [1] - [4]	**Qualitative :** Ability to understand and analyze the concept by oral and written communication **Quantitative:** Ability to communicate the concept by written form via paper.	Paper	**Form:** Lecture **Method:** Expository and Group Discussion **Assignments:** Group Paper	**Form:** Online **Method:** Synchronise or Asynchronies of Expository and Group Discussion (via Zoom, Google Meet, e-learning) **Assignment:** Paper	2%
8	**MID-TERM SEMESTER EXAM**	35%					
9 - 11	Designing, creating and presenting Cuisenaire Rods as a medium for introducing fractions, and discovering the principles of fractional arithmetic operations. (Sub CO 4)	**Topic :** Cuisenaire Rods as Media in Fraction Learning **Reference:** [1] - [4]	**Qualitative :** Ability to understand and design the objective of concept by oral and written communication **Quantitative:** Ability to communicate the concept by written form via paper.	Paper	**Form:** Lecture **Method:** Expository and Group Discussion **Assignments:** Group Paper	**Form:** Online **Method:** Synchronise or Asynchronies of Expository and Group Discussion (via Zoom, Google Meet, e-learning) **Assignment:** Paper	2%
12 - 13	Designing, creating, and presenting media to present concepts or principles in plane and space geometry (Sub CO 4)	**Topic :** Geometry learning media **Reference:** [1] - [4]	**Qualitative :** Ability to understand and analyze the concept by oral and written communication **Quantitative:** Ability to communicate the concept by written form via paper.	Paper	**Form:** Lecture **Method:** Expository and Group Discussion **Assignments:** Group Paper	**Form:** Online **Method:** Synchronise or Asynchronies of Expository and Group Discussion (via Zoom, Google Meet, e-learning) **Assignment:** Paper	2%
14 - 15	Designing media for school mathematics learning based on the 2013 curriculum *(Sub CO 5)*	**Topic :** School Mathematics Learning Media **Reference:** [1] - [4]	**Qualitative :** Ability to understand and design the objective of concept by oral and written communication **Quantitative:** Ability to communicate the	Paper	**Form:** Lecture **Method:** Expository and Group Discussion	**Form:** Online **Method:** Synchronise or Asynchronies of Expository and Group Discussion (via Zoom,	2%

			concept by written form via paper.		**Assignments:** Group Paper	Google Meet, e-learning) **Assignment:** Paper	
16	Prepare and carry out mathematics learning media exhibitions *(Sub CO 5)*	**Topic :** Mathematics learning media exhibition **Reference:** [1] - [4]	**Qualitative :** Ability to understand and design the objective of concept by oral and written communication **Quantitative:** Ability to communicate the concept by written form via paper.	Paper	**Form:** Lecture **Method:** Expository and Group Discussion **Assignments:** Group Paper	**Form:** Online **Method:** Synchronise or Asynchronies of Expository and Group Discussion (via Zoom, Google Meet, e-learning) **Assignment:** Paper	2%
FINAL SEMESTER EXAM							35%

Reference :

1. Buku-buku pelajaran matematika sekolah
2. Depdiknas. 2016. *Kurikulum Matematika Sekolah Tahun 2013*
3. Internet access. *Learn Fractions with Cuisenaire Rods. Introduction.*
4. Bahan Ajar Mata Kuliah Media Pembelajaran Matematika.
5. Macromedia Flash
6. Buku-buku atau artikel lain yang relevan.

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