LEARNING PLAN SEMESTER
MATHEMATICS DEPARTMENT
FACULTY OF MATHEMATICS AND NATURAL SCIENCES

Course Name	**: Psychology of Mathematical Instructional**	**Semester : III**	**Workload : 2 SKS**	**Code Course : MAT1.61.3202**
Programme Study	**: Mathematics Education**	**Lecturer:** **Lecturer Team**		
Faculty	**: Mathematics and Natural Sciences**			

Programme Learning Outcomes (PLO)

PLO 5 : Able to use general knowladge concepts to support professional teacher competencies

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 : Able to Explain the notion of psychology, learning psychology, mathematics learning psychology, character education in mathematics learning; individual characteristics based on learning styles, gender, heredity, and environment; the nature of mathematics, the characteristics of mathematics, and the objectives of learning mathematics; the characteristics of constructivist-based learning, procedures for forming mathematical concepts and schema ideas in understanding mathematical concepts; the meaning of each noticing, anxiety, authoritarian, democratic, in mathematics learning; interpersonal and emotional factors, various types of imagery; the ability to relate to the school environment

CO 2 : Distinguishing various learning theories based on cognitive psychology, behavior, and its application in mathematics; between intuitive and reflective intelligence, short term memory, long term memory, and metacognition

CO 3 : Showing the responsibility attitude in own works

CO 4 : 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	Able to define and understand the mathematics learning psychology, the nature of mathematics, mathematical characteristics and the purpose of mathematics learning (*Sub CO 1*) Able to showing the	**Topic :** Mathematics learning psychology, the nature of mathematics, mathematical characteristics and the purpose of mathematics learning **Reference:** [1] - [5]	**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	2%

	responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)						
2	Able to understand the importance of education of character through mathematics learning *(Sub CO 1)* Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)	**Topic :** Education of character, character valuesin mathematics **Reference:** [1] - [5]	**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%
3	Able to understand the Individual characteristics based on learning style, gender, heredity, and environment *(Sub CO 1)* Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)	**Topic :** individual characteristics based on learning style, gender, heredity, and environment **Reference:** [1] - [5]	**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%
4-6	Able to distinguish various learning theories based on behavioral psychology and cognitive psychology *(Sub*	**Topic :** Learning theories based on behavioral psychology and cognitive psychology	**Qualitative :** Ability to understand and design the objective of concept by oral and written communication **Quantitative:**	Paper	**Form:** Lecture **Method:** Expository and Group	**Form:** Online **Method:** Synchronise or Asynchronies of Expository and Group	8%

	CO 2) Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)	**Reference:** [1] - [5]	Ability to communicate the concept by written form via paper.		Discussion **Assignments:** Group Paper	Discussion (via Zoom, Google Meet, e-learning) **Assignment:** Paper	
7	Able to explain the formation of mathematical concepts and scheme ideas (formation of concept structures) (*Sub CO 1*) Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)	**Topic :** Formation of Mathematical Concepts and Scheme Ideas (Formation of concept structures) **Reference:** [1] - [5]	**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	Able to distingush intuitive and reflective intelligenceand mentioning the example in mathematics *(Sub CO 2)* Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)	**Topic :** Intuitive and reflective intelligence **Reference:** [1] - [5]	**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%
10	Able to explain the definition and the benefits of symbol in mathematics *(Sub CO 1)*	**Topic :** symbol in mathematics **Reference:**	**Qualitative :** Ability to understand and design the objective of concept by oral and written communication	Paper	**Form:** Lecture **Method:** Expository	**Form:** Online **Method:** Synchronise or Asynchronies of	2%

	Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)	[1] - [5]	**Quantitative:** Ability to communicate the concept by written form via paper.		and Group Discussion **Assignments:** Group Paper	Expository and Group Discussion (via Zoom, Google Meet, e-learning) **Assignment:** Paper	
11	Able to explain various types of imagery *(Sub CO 1)* Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)	**Topic :** various types of imagery **Reference:** [1] - [5]	**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	Able to explain interpersonal and emotional factors *(Sub CO 1)* Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)	**Topic :** interpersonal and emotional factors **Reference:** [1] - [5]	**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%
13	Able to understand, noticing, anxiety, authoritarian, and democratic, and passed in mathematics learning *(Sub CO 1)* Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward	**Topic :** Noticing, anxiety, authoritarian, democratic in learning mathematics **Reference:** [1] - [5]	**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%

	team works (*Sub CO 4)*						
14	Able to distingushing Short term memory, long term memory, and metacognition *(Sub CO 2)* Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)	**Topic :** Short term memory, long term memory, and metacognition **Reference:** [1] - [5]	**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%
15	Able to explain about skills to relate to the school environment *(Sub CO 1)* Able to showing the responsibility attitude in own works (*Sub CO 3*) Able to show responsibility attitude toward team works (*Sub CO 4*)	**Topic :** Skills to relate to the school environment **Reference:** [1] - [5]	**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%
16	**FINAL SEMESTER EXAM**						35%

Reference :

1. Skemp, Richard R, (1982). The psychology of learning mathematics. New York: Penguin Books ltd
2. Hudoyo, Herman, 1985, Teori Belajar dalam Proses Belajar Mengajar Matematika, Jakarta : C.V Fortuna.
3. Ruseffendi, H. E.T, 2006, Pengantar Kepada Membantu Guru Mengembangkan Kompetensinya dalam Pengajaran Matematika untuk Meningkatkan CBSA, Bandung :Tarsito
4. Dewanti Sintha Sih. 2010. Diktat Psikologi Belajar Matematika, Yogyakarta. Program Studi Pendidikan Matematika Fakultas Sains dan Teknologi, UIN Sunan Kali Jaga
5. Santrock, John W. 2002. Life-span Development : Perkembangan Masa Hidup. Edisi 5 jilid 2, Jakarta : Erlangga