

LEARNING THEORIES IN MATHEMATICS
MATHEMATICS 605 SECTION 1
CRN 75285

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WEBPAGE <http://umonline.umt.edu/>

- GOALS
1. To provide students with the opportunity to become immersed in the foundational learning theorists in mathematics education.
 2. To provide a forum for graduate students in mathematics, mathematics education or education to discuss and reflect on the history of theories in mathematics education and to consider implications of such theory on current mathematics education policy, assessment, and practice.
 3. To provide an opportunity for the evaluation and assessment of student understanding within an established mathematics education learning theory.
 4. To provide an opportunity for the exploration and presentation of a mathematics learning theory aligned with the student's particular area of research interest.

TEXT Collected Readings

GRADING	10 Annotated Bibliographies	40	Points
	Learning Theories Study	40	Points
	Learning Theory Presentation	40	Points
	Learning Theory Final Paper	40	Points
	Total	120	Points

SCALE Let S be your final score as a percent of available points in the course then,

93	\leq	S	$<$	100	\Rightarrow	A
90	\leq	S	$<$	93	\Rightarrow	A-
87	\leq	S	$<$	90	\Rightarrow	B+
83	\leq	S	$<$	87	\Rightarrow	B
80	\leq	S	$<$	83	\Rightarrow	B-
77	\leq	S	$<$	80	\Rightarrow	C+
73	\leq	S	$<$	77	\Rightarrow	C
70	\leq	S	$<$	73	\Rightarrow	C-
67	\leq	S	$<$	70	\Rightarrow	D+
62	\leq	S	$<$	67	\Rightarrow	D
60	\leq	S	$<$	63	\Rightarrow	D-
0	\leq	S	$<$	60	\Rightarrow	F

ANNOTATED BIBLIOGRAPHIES: Weekly readings meant to expose students to a variety of theories of learning in mathematics education will constitute the majority of the activity in the course. In preparation for the discussion of these readings, students will be asked to compile an annotated bibliography for each reading. A format for this activity will be provided.

LEARNING THEORIES STUDY: Each student will be asked to apply a chosen learning theory as a lens for the study of student understanding in a particular area of mathematics. For example, a student might choose to adopt van Heile's learning theory of geometry to study an 8th grade student's understanding of the Pythagorean theorem. A paper describing the learning theory framework and the results of the study is required. Write at least 1500 words. Cite at least 3 sources.

LEARNING THEORIES PAPER: Each student will be asked to investigate a learning theory not explored in the collected readings and produce a paper describing the theory both verbally and through well-chosen examples. The assignment is an opportunity to investigate and explore available theories within the students area of teaching or research interest. Write at least 1500 words. Cite at least 3 sources.

LEARNING THEORIES PRESENTATION: Each student will be asked to make a 50 minute presentation of the learning theory that they have explored in their learning theories paper. Presentations should do more than just reiterate the written work and strive to give the listeners an opportunity to experience and perhaps apply the learning theory in some tangible fashion.