



# UNIVERSITÀ DI PAVIA

Anno Accademico 2020/2021

DIDACTICS OF MATHEMATICS	
Enrollment year	2020/2021
Academic year	2020/2021
Regulations	DM270
Academic discipline	MAT/04 (COMPLEMENTARY MATHEMATICS)
Department	DEPARTMENT OF PHYSICS
Course	
Curriculum	Didattica e storia della fisica
Year of study	1°
Period	1st semester (05/10/2020 - 20/01/2021)
ECTS	9
Lesson hours	72 lesson hours
Language	Italian
Activity type	ORAL TEST
Teacher	ANTONINI SAMUELE (titolare) - 9 ECTS
Prerequisites	Mathematical knowledge and competencies developed in the "laurea triennale" in mathematics. The course is not recommended for students of the "laurea triennale".
Learning outcomes	The course aims to analyze the main models for Mathematics teaching and learning and the main theoretical frameworks which provide the classical conceptual background for research in Mathematics Education.
Course contents	<p>Teaching-learning Mathematics models:</p> <ul style="list-style-type: none"><li>- the traditional model of knowledge transmission</li><li>- the radical constructivism</li><li>- the social constructivism</li><li>- the theory of didactical situations.</li></ul> <p>Analysis of Ministry of Education documents on Mathematics teaching at the pre-university level.</p>

	<p>Moreover, we will analyse the main tenets of theoretical framework which provide the classical conceptual background for research in Mathematics Education, and investigate how some of the ideas developed within these theories have informed research studies in Mathematics Education.</p> <p>More specifically, we will focus on:</p> <ul style="list-style-type: none"> <li>- Piaget's studies on the development of the cognitive development</li> <li>- Fischbein's studies on intuition</li> <li>- Vygotsky's studies and the cultural-historical approach.</li> </ul>
<b>Teaching methods</b>	Frontal lessons, collaborative activities and discussions. Students will be asked to read some articles which will be collectively discussed during the course. It is required a regular presence at the lessons.
<b>Reccomended or required readings</b>	<ul style="list-style-type: none"> <li>- Articles from scientific journals and other materials made available by the teacher.</li> <li>- Documentation available online on the website of the Italian Ministry of Education (Ministero della Pubblica Istruzione).</li> </ul>
<b>Assessment methods</b>	Oral examination concerning a discussion with the goal to evaluate the knowledge of the topics presented in the course.
<b>Further information</b>	
<b>Sustainable development goals - Agenda 2030</b>	<a href="#">\$Ibl legenda sviluppo sostenibile</a>