



## EVOLUTION EQUATIONS - PART TWO

<b>Enrollment year</b>	2009/2010
<b>Academic year</b>	2009/2010
<b>Regulations</b>	DM270
<b>Academic discipline</b>	MAT/05 (MATHEMATICAL ANALYSIS)
<b>Department</b>	DEPARTMENT OF MATHEMATICS "FELICE CASORATI"
<b>Course</b>	MATHEMATICS
<b>Curriculum</b>	C
<b>Year of study</b>	0°
<b>Period</b>	(01/03/2010 - 30/09/2010)
<b>ECTS</b>	3
<b>Lesson hours</b>	24 lesson hours
<b>Language</b>	Italian
<b>Activity type</b>	ORAL TEST
<b>Teacher</b>	SCHIMPERNA GIULIO FERNANDO - 3 ECTS
<b>Prerequisites</b>	The knowledge of the basic elements of calculus for functions of one or more variables is required, as well as the theory of Lebesgue's integration and of $L^p$ spaces, the basic notions on Banach and Hilbert spaces, and the fundamental theorems of weak compactness. Further notions of functional analysis, like distributional derivatives and Sobolev spaces, will be extensively used during the course, but a brief survey will be given at the beginning.
<b>Learning outcomes</b>	The main task of the course consists in describing some methods that are important for the mathematical analysis of evolutionary PDE's, in particular from the point of view of physical applications.
<b>Course contents</b>	The content of the course has partly a monographical character and may vary from year to year. During the present academic year (2009/10) the following topics have been treated: abstract theory of infinite-dimensional dynamical systems; trajectories, stationary points;

	dissipative dynamical systems; omega-limit sets, attractors; applications to the Allen-Cahn equation and to the semilinear damped wave equation.
<b>Teaching methods</b>	Lectures
<b>Reccomended or required readings</b>	J.C. Robinson, Infinite-dimensional Dynamical Systems, Cambridge texts in applied mathematics.  G. Schimperna, lecture notes of the course, available at the webpage <a href="http://www-dimat.unipv.it/giulio/eqev09.html">http://www-dimat.unipv.it/giulio/eqev09.html</a>
<b>Assessment methods</b>	The final exam will be in oral form.
<b>Further information</b>	
<b>Sustainable development goals - Agenda 2030</b>	<a href="#">\$bl_legenda_sviluppo_sostenibile</a>