

6.0 credits	45.0 h	2q
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Teacher(s) :	Claeys Tom ; Haine Luc ;
Language :	Français
Place of the course	Louvain-la-Neuve
Prerequisites :	LMAT1222 Analyse complexe and LMAT2110 Eléments de géométrie différentielle.
Main themes :	In complex analysis, Toeplitz determinants, orthogonal polynomials, Riemann-Hilbert problems, the nonlinear steepest descent method, asymptotic behavior and the Ising model will be studied. In complex geometry, the principal theorems in the theory of compact Riemann surfaces, the Riemann-Roch theorem, Abel's theorem and Jacobi's inversion problem, and their applications to the Toda lattice will be studied.
Aims :	The course will in alternance treat subjects in complex analysis and complex geometry, in relation to applications in the theory of integrable systems, orthogonal polynomials and random matrices. The goal of the course is to give an introduction to a modern topic related to complex analysis or geometry, and to initiate them to research in this domain. <i>The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".</i>
Evaluation methods :	oral exam or oral and written presentation of a project made during the semester.
Teaching methods :	Course : 3 h./week.
Cycle and year of study :	> Master [120] in Mathematics > Master [120] in Physics
Faculty or entity in charge:	MATH