ΕΚΠΑ - ΤΜΗΜΑ ΜΑΘΗΜΑΤΙΚΩΝ
ΑΝΑΚΟΙΝΩΣΕΙΣ ΣΕΜΙΝΑΡΙΩΝ

11/12/2015 – 18/12/2015

Α/Α	Τίτλος Σεμιναρίου	Οργάνωση	Ωρολόγιο πρόγραμμα	Τοποθεσία	Επικοινωνία
1	**ΣΕΜΙΝΑΡΙΟ ΜΙΓΑΔΙΚΗΣ ΚΑΙ ΑΡΜΟΝΙΚΗΣ ΑΝΑΛΥΣΗΣ**	Τομέας Μαθηματικής Ανάλυσης	Τρίτη 15.12.2015 11:00 – 14:00	Αίθουσα Α32	ntsiga@math.uoa.gr
	Ομιλητές: Βασίλης Νεστορίδης, Πανεπιστήμιο Αθηνών, Μιχάλης Παπαδημητράκης , Πανεπιστήμιο Κρήτης				
	Περίληψη: 11:00-12:30, 1ος ομιλητής: «*Μονόπλευρη επεκτασιμότητα από καμπύλες μη αναλυτικές*» Περίληψη: Θα επεκτείνουμε το αποτέλεσμα των Μπόλκα, Νεστορίδη, και Παναγιώτη σε απλές συμπαγείς καμπύλες. 12:30-14:00, 2ος ομιλητής: «*Συνεχής Αναλυτική Χωρητικότητα, Μέρος 10ο*» Περίληψη: Στόχος αυτής της σειράς διαλέξεων είναι ο χαρακτηρισμός των κλειστών υποσυνόλων *L* του επιπέδου που έχουν την ακόλουθη ιδιότητα: Για κάθε ανοιχτό $\Omega \subset C$ και κάθε συνεχή συνάρτηση $f: \Omega \to C$ η οποία είναι ολόμορφη στο $\Omega - L$, τότε αυτόματα η *f* είναι ολόμορφη σε ολόκληρο το Ω.				
2	**THE COMPUTATION OF MULTIPLE ROOTS OF A BERNSTEIN BASIS POLYNOMIAL**	Τομέας Μαθηματικής Ανάλυσης	Τετάρτη 16.12.2015 10:00 – 11:00	Αίθουσα Γ21	mmitroul@math.uoa.gr
	Ομιλητές: Joab Winkler, Department of Computer Science, The University of Sheffield, Sheffield, United Kingdom				
	Περίληψη: The Bernstein basis is used extensively in geometric modelling because of its enhanced numerical properties and elegant geometric properties in the unit interval. The computation of the points of intersection of curves and surfaces is an important problem in geometric modelling, and it gives rise to a polynomial equation. Although there is an extensive literature on numerical methods for the solution of polynomial equations, they fail to address satisfactorily an important consideration of the polynomial equations that arise in geometric modelling. In particular, multiple roots are of particular interest because they define conditions of tangency, which are important for smooth intersections of curves and surfaces. There are, however, significant numerical problems associated with the computation of multiple roots of a polynomial because of their instability - a small perturbation in the coefficients of the polynomial is sufficient to cause the roots of the polynomial to break up into complex conjugate pairs, which is unsatisfactory. This presentation will show that multiple roots of a polynomial can be computed using an algorithm developed by Gauss. Although this algorithm is conceptually simple, its computational implementation is not trivial because it involves many greatest common divisor computations and polynomial divisions (deconvolutions), both of which are ill-posed operations. Furthermore, the combinatorial factors that arise in computations with Bernstein polynomials can cause numerical problems, which must also be considered. It will be shown that structure-preserving matrix methods, applied to the Sylvester resultant matrix, allow the development of a Bernstein basis polynomial root finder, such that if an inexact form f(y) of an exact Bernstein basis polynomial $\hat{f}(y)$ that has multiple roots is specified, then the complex conjugate pairs of roots of f(y) that originate from the same multiple root of $\hat{f}(y)$ can be 'sewn' together, thereby preserving in the roots of f(y) an important property of the roots of $\hat{f}(y)$. The talk will include an elegant geometric explanation of the method and numerical examples.				