Lecture Series in Applied and Computational Mathematics

We would like to draw your attention to a series of lectures within the School of Basic Sciences and Humanities in corporation with the International Office at the German Jordanian University. These lectures will take a place from November 1st to November 6th, 2017 as described in attached program.

This series will be given by Professor Andreas Meister of the Department of Mathematics and Natural Sciences, University of Kassel, Germany. This series is also associated with the Flying Faculty Program of GJU. The aim of this series is to provide students and lecturers a spacious range of high quality, creative, original and excellent scientific exchange covering a broad area of educational and research activities in science and technology principles.

It is with great pleasure to invite you to attend these lecture series. All lectures will be provided at GJU main campus as described in attached agenda.

Please feel free to pass this information on to anybody who you think may be interested.

If you have any queries, please don't hesitate to contact me.

Looking forward to meeting you and to a successful lecture series.

With the very best regards

Dr Dia Zeidan

Title: Fast and Stable Methods for Large Linear Systems Arising in Engineering Applications
The course is based on the book: Andreas Meister: Numerik linearer Gleichungssysteme, Springer-Spektrum

http://www.springer.com/de/book/9783658071998

Speaker: Andreas Meister

Abstract: The simulation of real life applications possesses a crucial importance in a wide variety of scientific as well as industrial areas. Thereby, the performance of the whole numerical method is often decisively depending on the properties of the incorporated solver for linear systems of equations. The course provides a comprehensive introduction to both classical and modern iterative solvers for a stable, efficient and reliable solution of linear systems and is design for students from Mathematics, Engineering, Physics, Computer Science and so on.

The course content covers

- Introduction to basics from numerical linear algebra
- Splitting methods
- Multi-grid schemes
- Krylov subspace methods like CG, GMRES, BiCG, CGS, BiCGSTAB
- Preconditioning

Detailed Schedule:

Wednesday, November 1st, 2017: @ Auditorium H

13:30-14:30 Lecture: Introduction to Splitting Methods

14:30-15:30 Lecture: Jacobi-, Gauss-Seidel Methods and Relaxation Techniques

Sunday, November 5th, 2017: @ Auditorium H

13:30-14:30 Lecture: Method of Conjugate Gradients

14:30-15:45 Lecture: Multigrid Method

Monday, November 6th, 2017: @ Auditorium H

13:30-14:30 Lecture: GMRES, BICG, BICGSTAB

14:30-15:45 Lecture: Preconditioning