

**ABDUS SALAM SCHOOL OF MATHEMATICAL SCIENCES (ASSMS)
AND
NATIONAL CENTER FOR MATHEMATICS (NCM)**

invite you to the Intensive Course on

**KÄHLER MANIFOLDS
AND
THE HODGE CONJECTURE**

LEADING SPEAKER:

Professor Hồng Vân Lê

Mathematical Institute, Zitna, Praha 1, Czech Republic

Kähler manifolds form a bridge between algebraic geometry and complex differential geometry. In this course we shall discuss the following concepts: complex manifolds, Kähler metrics, sheaf cohomology, Sobolev spaces, pseudo-differential operators, elliptic differential operators. We shall prove the Hodge decomposition theorem, the Lefschetz decomposition theorem as well as the Kodaira embedding theorem. We end the course with the Hodge conjecture.

The following themes are offered to a student for her/his presentation during the course: the Frobenius theorem, the Newlander-Nirenberg theorem, blowups of a complex manifold, DeRham theorem, the Hodge index theorem, the Lefschetz (1,1)-theorem.

RECOMMENDED LITERATURE:

- C. Voisin, "Hodge Theory and Complex Algebraic Geometry", 1, Cambridge University Press, 2002.
- R. O.Wells, "Differential Analysis on Complex Manifolds", Prentice-Hall, 1973.

DURATION:

September 10 - 30, 2008

LECTURE:

Every Monday, Tuesday, Wednesday, Friday (10:00 AM - 12:00 AM)

TUTORIAL:

Every Thursday, Saturday (10:00 AM - 12:00 AM)

VENUE:

**ABDUS SALAM SCHOOL OF MATHEMATICAL SCIENCES
35 C/II, M. M. Alam Road, Gulberg III, Lahore.
Phone: 042 – 9263018, Fax: 042 – 9263020**