

Lecture 9

(1)

Admin

- Complementary material for Project/Problem A is allowed until Friday Oct. 20 at 15.00.
- Deadline at Friday Oct 20 at 15.00 is sharp:
 - Any Problem A-B handed in after deadline is ignored \rightarrow no bonus points or written exam.
 - Any Project A-B handed in after deadline can give maximum grade 3.
- Written exam Saturday Oct. 21.
- Course evaluation form is available at homepage:
fill out after the written exam.

Overview of course

$$A(u) = f \quad \text{for } x \in \Omega \quad (\text{or } (x,t) \in \Omega \times I)$$

Ex. $A(u) = -\Delta u$ (Poisson equation)

$$A(u) = u + \beta \cdot \nabla u - \varepsilon \Delta u \quad (\text{conv.-diff. eqn.})$$

$$A(u) = u - \Delta u \quad (\text{Heat eqn.})$$

$$A(u) = u - \Delta u \quad (\text{Wave eqn.})$$

Variational formulation (mult. by test function)
& integrate

Find $u \in V$: $a(u, v) = L(v) \quad \forall v \in V$

Existence & uniqueness of solutions: Lax-Milgram