Lecture 30. 9 December 2004

- **Review of Lecture #29.**
  - **Constrained steepest descent method (CSD):** linearization method. Linearize the nonlinear problem.
  - **Definition of a QP subproblem.** Search direction calculation.
  - **Solution method for QP problems** - simplex method; many other methods.
  - **Step size determination** in CSD method; definition of descent function, descent conditions, inaccurate line search.

- **Sequential Quadratic Problem:** SQP methods - derive the subproblem for equality constrained case.
- **Hessian updating** - of the Lagrangian function.
- **Generalization** to inequality case; potential constraint strategy.
- **Other descent functions:** Augmented Lagrangian.
- **Other methods:** Method of feasible directions; feasible direction, improving feasible direction. Gradient projection method - derivations. Generalized reduced gradient method: expression for the reduced gradient

- **HW:** Read Chapter 11.
- **Final Exam:** Take Home