

## **Teaching Strategies for Cooperative Learning**

**Facilitator: Karl A. Smith**, *Cooperative Learning Professor of Engineering Education, Purdue University and Morse-Alumni Distinguished Teaching Professor and Emeritus Professor of Civil Engineering, University of Minnesota*

**Monday and Tuesday, December 12 & 13, 0900-1700 and Wednesday, December 14, 0900-1230**

An ongoing challenge for faculty is how to develop effective strategies that engage students with one another and with the instructor. In this workshop, participants will explore various techniques for designing and facilitating student-student and student-faculty interaction that ensure enhanced learning. Participants will learn more about their role in designing, structuring, and implementing cooperative learning activities that support higher achievement and greater productivity by all students. These strategies are research based, and include positive interdependence, individual and group accountability, face-to-face interaction, teamwork skills, and group processing. Examples will be provided to help the participants select, design, and revise cooperative learning and challenge-based learning materials. The workshop is hand-on, interactive, and focused on helping participants select, prepare, and structure cooperative and challenge-based learning materials and strategies for their classes. Participants will learn how to overcome the challenges and barriers to implementing active and cooperative learning.

Participant Learning Goals (specific learning objectives will be provided for each section of the workshop)

1. Strategies for designing high performance teamwork
2. Strategies for building teamwork skills (task and relationship skills)
3. Models for processing and monitoring team work
4. Measures of individual learning in cooperative learning (assurance of learning that demonstrates both individual and group accountability for the task output)

### Tentative Agenda

Foundations of Design of High Performance Team Learning Environments – Understanding by Design and How People Learn (1/2 day)

- Understanding by Design (UdB) process
- How People Learn (HPL) Framework
- Course, learning module, class session planning with UdB and HPL

Social Interdependence Theory, Cooperative Learning and Challenge-Based Learning (1/2 day)

- Informal and formal cooperative learning with emphasis on building teamwork skills
- Problem-based cooperative learning – exercise and modeling of faculty role with processing and monitoring of teamwork
- Design and implementation of cooperative learning and challenge-based learning with emphasis on developing/refining student's teamwork skills

Preparing and Supporting Students to Work in Teams in NTU Learning Environments (1 day)

- High-Performance Teamwork – Communications, Decision Making, Conflict Management, and Leadership
- Innovation in a Team Environment
  - Project Innovation – An example from IDEO

Assessing Students in Team-Based Learning (1/2 day)

- Engaging Faculty and Students in Talking about Teaching and Learning (Informed by Assessment Data)
  - Formative and Summative Assessment
  - Rubrics for Assessing Individual Learning and Teamwork
- Team-Based Learning Assessment Strategies
  - Group Processing, e.g., Plus/Delta
  - Team Charter
  - Team Contract (Agreement)
  - Individual/Peer Reflection and Review
  - Process Observation