

# Teamwork

## Takeaways:

- Students who work with peers feel a greater sense of community/belonging [1, 2] and are more likely to persist in the field [3].
- Student groups can accomplish more than individual students, and open-ended projects help to develop engineering design skills and foster lifelong learning [4].
- Group work develops professional skills such as communication, conflict resolution, and problem-solving [5]
- Effective group work requires active participation by the instructor, including careful structuring of individual and group assignments, well-defined goals and metrics, and application of student feedback to later assignments (for an overview, see [5])

## Fast Facts:

- *Positive interdependence*: Individual success is enhanced by the success of other group members and the group as a whole.
- *Open communication* is the most important characteristic of a team: Are students comfortable asking each other questions, making suggestions, and admitting mistakes?
- Groups and teams, while related, are distinct. A *group* has individual members who make additive contributions toward a common goal (think wrestling or gymnastics). A *team* focuses on tasks that necessitate two or more people to work together (think basketball) [6].

## Teaching/Mentoring Tips:

- Assign students to groups based on necessary skills or interests [7].
  - [www.catme.org](http://www.catme.org): web-based service for group formation.
  - Women and minority students may participate more in groups where they comprise 50% or more of the team [8].
- Be specific about why team projects are important and how good teams operate [9-11].
  - Require clear definition of group rules and roles
  - Structure assignments so that each group member must contribute
    - Individual assignments that contribute a unique piece of the whole
    - Group assigns tasks to members at the beginning of each assignment and reports on contributions at the end
  - Have groups assess themselves early in the process and regularly throughout assignment [12]. CATME rubric: <https://info.catme.org/catme-word-documents/>
- Ask hard questions! If an assignment could be more easily done by individuals, it will not help learning outcomes
- Clear structure and goals helps: provide rubrics for grading of group assignments.
- How to grade groups on how well they work? Use CATME multiplier [13] to convert group grade to individual grade, or ABET outcome 5 as a rubric item.



# UD COE Inclusive Teaching Workshop Series:

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## References:

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