

# Diversity, Equity, and Inclusion in X50 and X95

## Faculty Communities for Inclusive Teaching, 2018

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### Project Overview

In the Mechanical Engineering undergraduate curriculum, all students are required to take two sequences in which the work required is heavily team-based. In both sequences, these teams are diverse in terms of skills (communication/calculation/organization/writing), and faculty teaching of and student implementation of successful teamwork approaches are always a challenge.

The purpose of this teaching circle was to pick up where a previous working group (organized by Prof. Diann Brei) left off to:

- **Weave topics of diversity, equity, and inclusion** into our X50 and X95 sequence of classes
- To **build awareness by students** and to **raise awareness among our colleagues** working with these teams of students of inclusive teaching strategies as well as student climate concerns
- To **make students** in these courses **feel welcome**, to build effective diverse teams, and to endeavor to exemplify how diverse teams provide better outcomes.

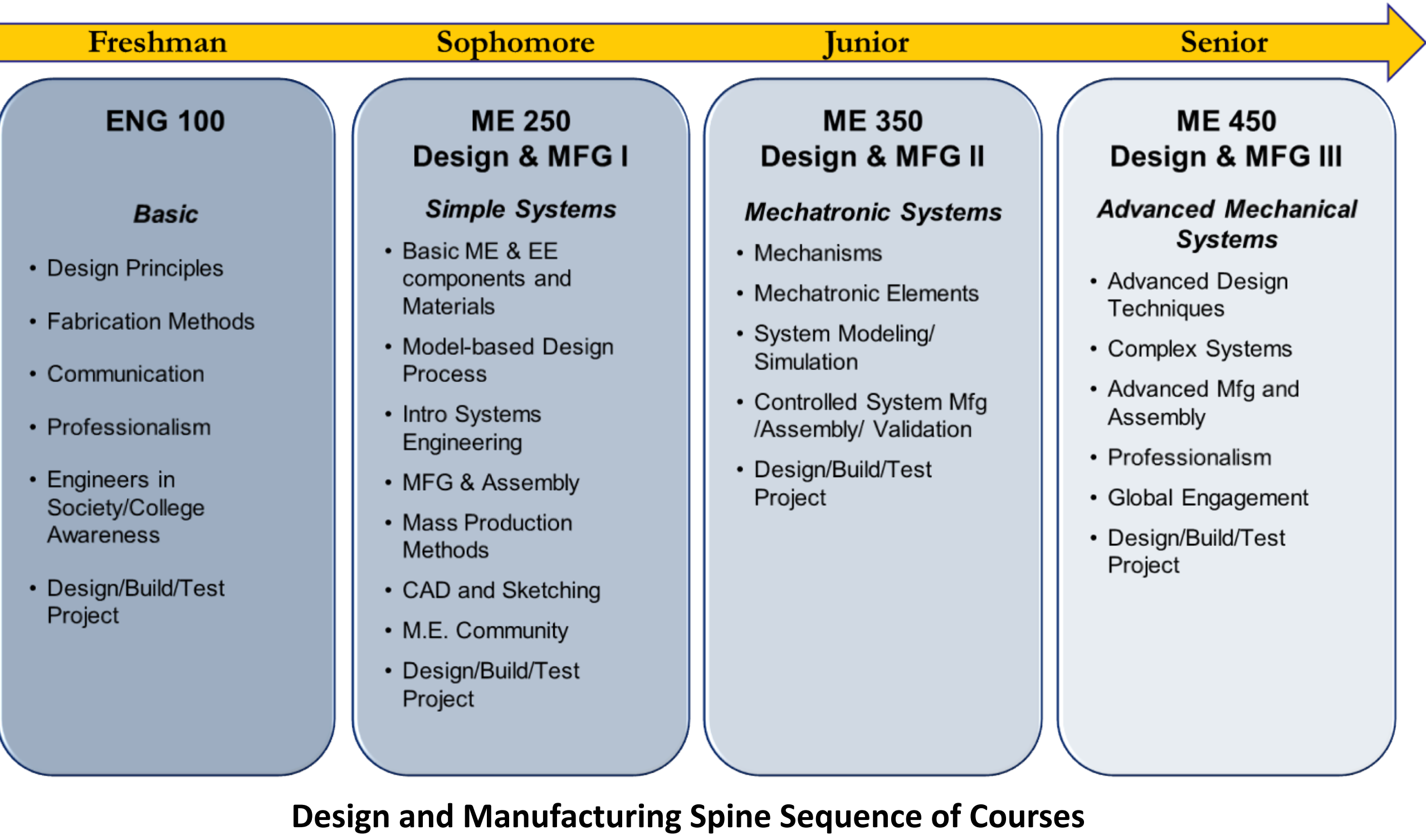
### Key Insights and Outcomes from Teaching Circle:

The following outcomes were as a result of our teaching circle:

- ☐ **Reviewed best-practices** for Inclusive Teaching from CRLT
- ☐ **Discussed current practices** in X50 and X95
  - Team Formation, Team expectations/coaching/management skills, Conflict Resolution,
- ☐ **Identified DEI topics** that could be introduced in each of the X50 and X95 classes
- ☐ **Decided** as a group that we would also **work towards developing streamlined (or consistent) best practices for our lab and design courses**

Work was continued over the summer to incorporate practices into teaching for an inclusive community

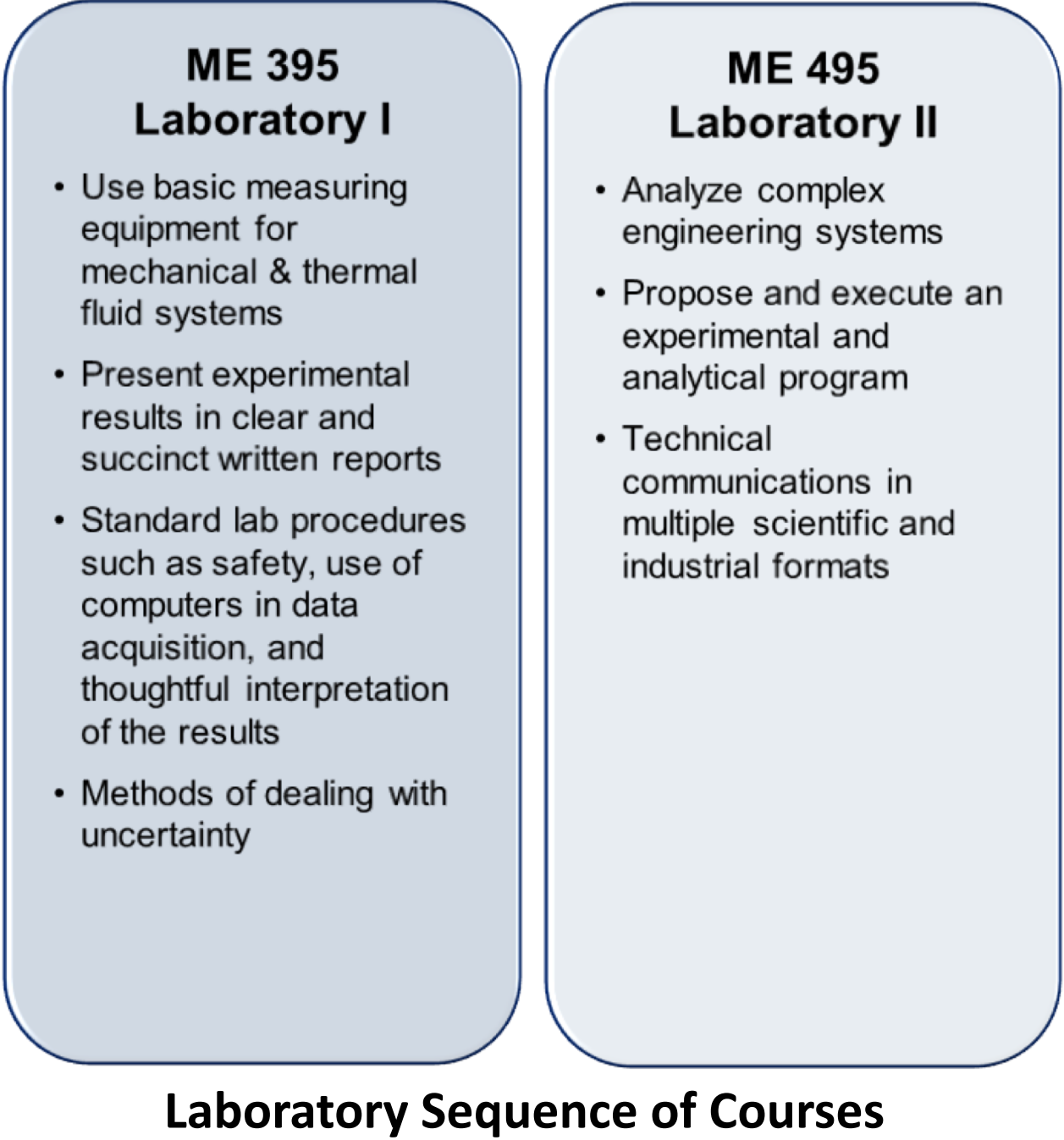
- ☐ Faculty to **improve syllabus phrasing** and **canvas accessibility**
- ☐ **Identify and develop DEI threads**, broken out by class
- ☐ **Develop training for GSIs** responsible for facilitating teamwork



### Next steps:

Going forward, our circle will:

- Continue to revise the content in these courses and look for ways to assess the impact of these changes
- Share the outcomes of this teaching circle and possible class revisions at an upcoming faculty meeting
- Possibly work on a unified "Best practices for team members"
- Discuss adopting a department common read to help facilitate discussion of DEI topics while working in teams (Example: "Difficult Conversations" (Stone, Patton Heen))

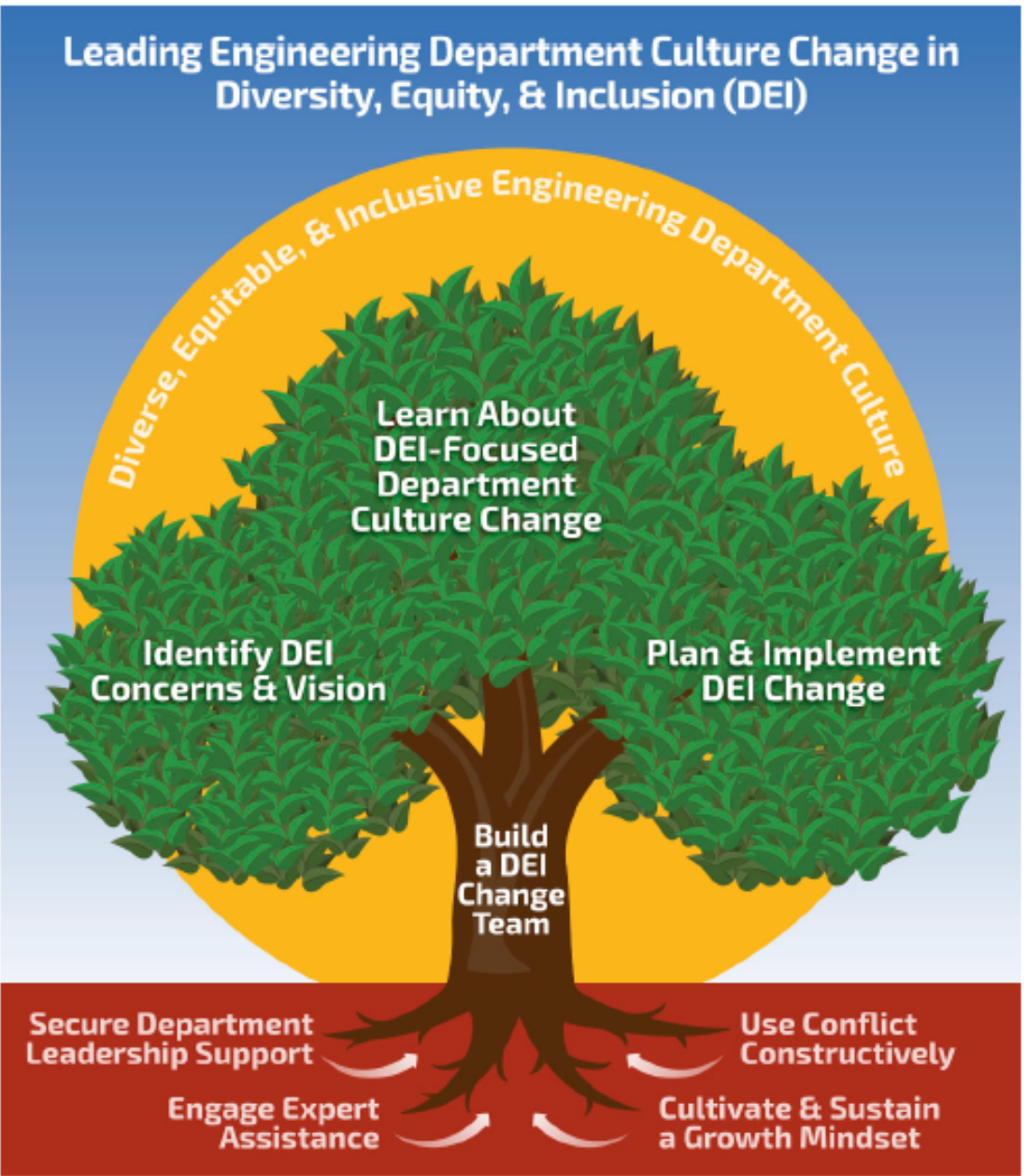


### Teaching Circle as DEI Change Team:

Using the TECAID (Transforming Engineering Culture to Advance Inclusion and Diversity) Model, we formed a teaching circle to act as a DEI Change Team for our design and laboratory classes. This teaching circle consisted of 6 instructors from both sequences that met 8 times over the winter semester, and several additional faculty that stayed engaged through email, but were not able to make the working meetings.

Our key actions for these meetings were:

- Exchange and discuss syllabi for x95 and x50 classes, and reflect on diversity, equity, and inclusion issues.
- Develop knowledge and awareness about DEI concepts, and look for opportunities to thread DEI topics and case studies into the curriculum so that students will be building skills and increasing awareness/discussion each year of our program.
- Exchange ideas on inclusive teaching challenges and strategies, especially as it pertains to team work: Building teams, including all members of the team, understanding team dynamics, and supportive environment for teams to be high performing. Dr. Tershia Pinder-Grover, Director of CRLT-ENGIN, attended one of our working sessions, and provided numerous resources to help.



Source: TECAID

	CURRENT Diversity, equity, and inclusion topics in X50/ X95	Outcomes from DEI Teaching Circle: Changes to be made before/during 2018-2019 academic year	
ME 250	<ul style="list-style-type: none"><li>• Equity is discussed in terms of team expectations: Take advantage of this opportunity to learn (shop skills, etc.), and make sure to let your teammates can learn as well, Contributor fields on the Bill or Materials: Who will do the CAD, machining, and assembly, think-pair-share activity in lecture about what you would do if a team member does not let others contribute to manufacturing, CAD, etc., and a Mid-Build Review Survey to see if students are contributing in the ways they should be.</li><li>• Communication discussion and practice within teams.</li><li>• Removed small barriers to using the space: provided extra safety glasses in the 250 shop.</li></ul>		
ME 350	<ul style="list-style-type: none"><li>• Equity is discussed in terms of team expectations. All students are encouraged by their instructors and GSIs to make sure that all team members participate.</li><li>• Communication discussion and practice within teams and across teams.</li><li>• Removed small barriers to using the space: provided Hair ties and extra safety glasses in the Assembly Room</li></ul>	Add content: Conflict Resolution	Syllabus: Each of the X50 and X95 classes can update their syllabus using Inclusive Syllabus Language. (Example source for this language: <a href="https://sites.lsa.umich.edu/inclusive-teaching/2017/08/24/inclusive-syllabus-language/">https://sites.lsa.umich.edu/inclusive-teaching/2017/08/24/inclusive-syllabus-language/</a> )
ME 450	<ul style="list-style-type: none"><li>• Micro-aggressions are discussed within individual instructor-team meetings, but only after conflict has arisen.</li><li>• Communication discussion and practice within teams, across teams, and with external stakeholders</li><li>• Removed small barriers to using the space: provided hair ties and extra safety glasses in the Assembly Room, hired GSIs with extensive experience working in on-campus shops and project teams (female role models).</li><li>• Lecture Content: Lecture: Intercultural Awareness (Pamela Heatlie, Office of DEI) Lecture/ Activities: How to provide feedback/ critique of design and within teams and across cultures. (Partial) Lectures: --Ethics-- Inclusive Design, designing for (all) safety --Human Variability-- Inclusive Design</li></ul>	(Remove content:) Conflict Resolution is covered in 495 and will also be covered in 350. Add content: Empathy, Emotional intelligence Add content/discussion: add more examples of design that excludes and strategies for inclusive design Add assignment: User-guide for individual team members ("How to work with me") to complete before discussing team norms. Add Activities: Teambuilding activities that open discussion on emotional IQ, conflict resolution	CANVAS: Each of the X50 and X95 classes can update their CANVAS course site and digital materials to make it more accessible. <a href="http://its.umich.edu/computing/accessibility-atcs/instructional-accessibility-tips">http://its.umich.edu/computing/accessibility-atcs/instructional-accessibility-tips</a>
ME 395	<ul style="list-style-type: none"><li>• Some systematic calling on groups to comment on their work; not at individual level</li><li>• Communication discussion and practice within teams</li><li>• Removed small barriers to using the space: provided extra safety glasses in the lab</li><li>• Lecture Content: Lecture: Awareness of biases Lecture: Difference in communications across culture</li></ul>	Add content: Unconscious Bias & Microaggressions o Ideas brainstormed: Recommendation letter example, resume example, perception of other's opinion of one's self, stereotypes about skills may translate into microaggressions in other interactions.	Continuous improvement towards an inclusive workspace in X50 (machine shop, assembly rooms, mechatronics lab) and X95 (Labs)
ME 495	<ul style="list-style-type: none"><li>• Lecture Content: Partial Lectures: Conflict Resolution Biases and stereotypes Ethics</li><li>• Communication discussion and practice within teams</li><li>• Removed small barriers to using the space: provided extra safety glasses in the lab</li></ul>	Add content: Active Listening	