

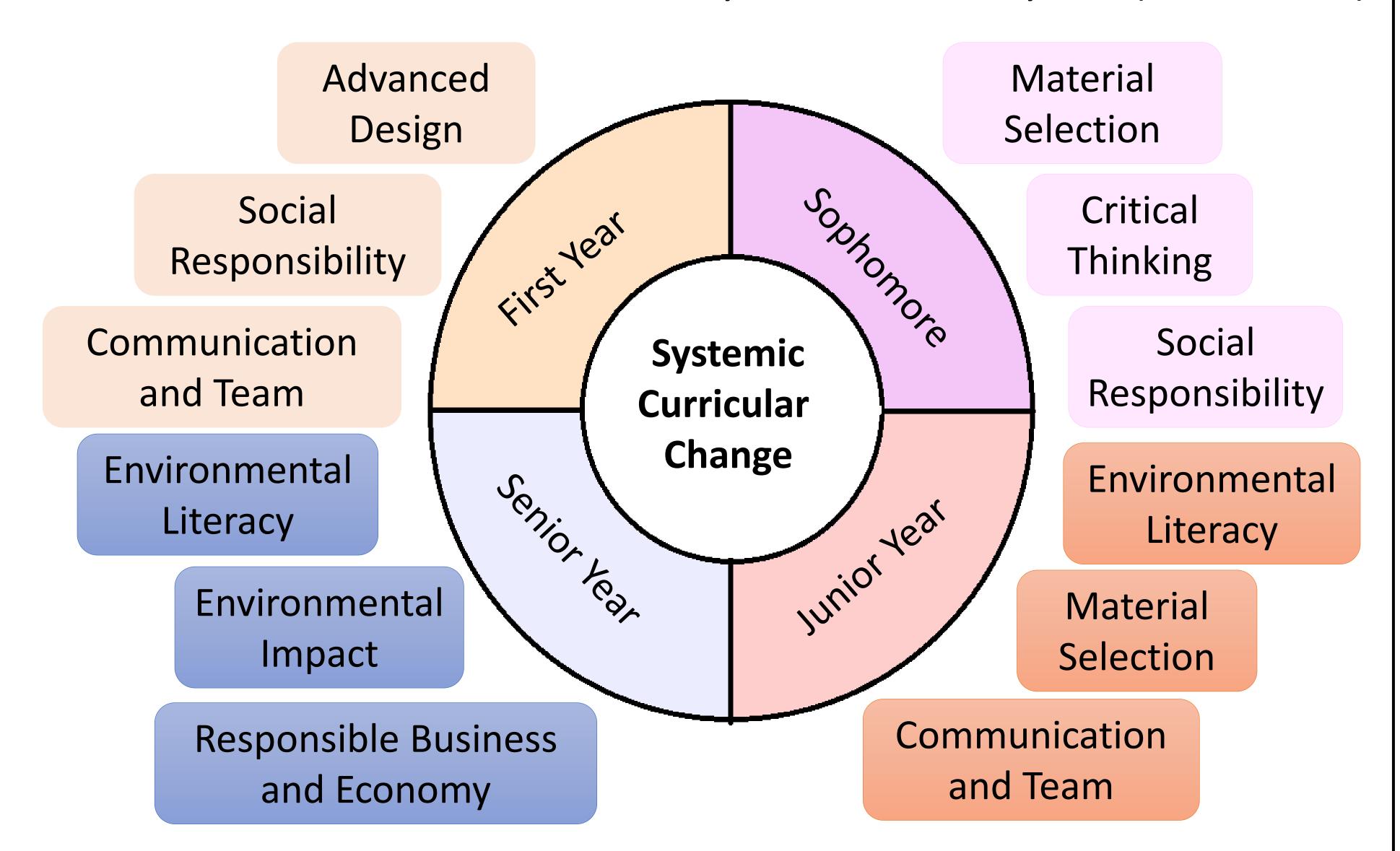


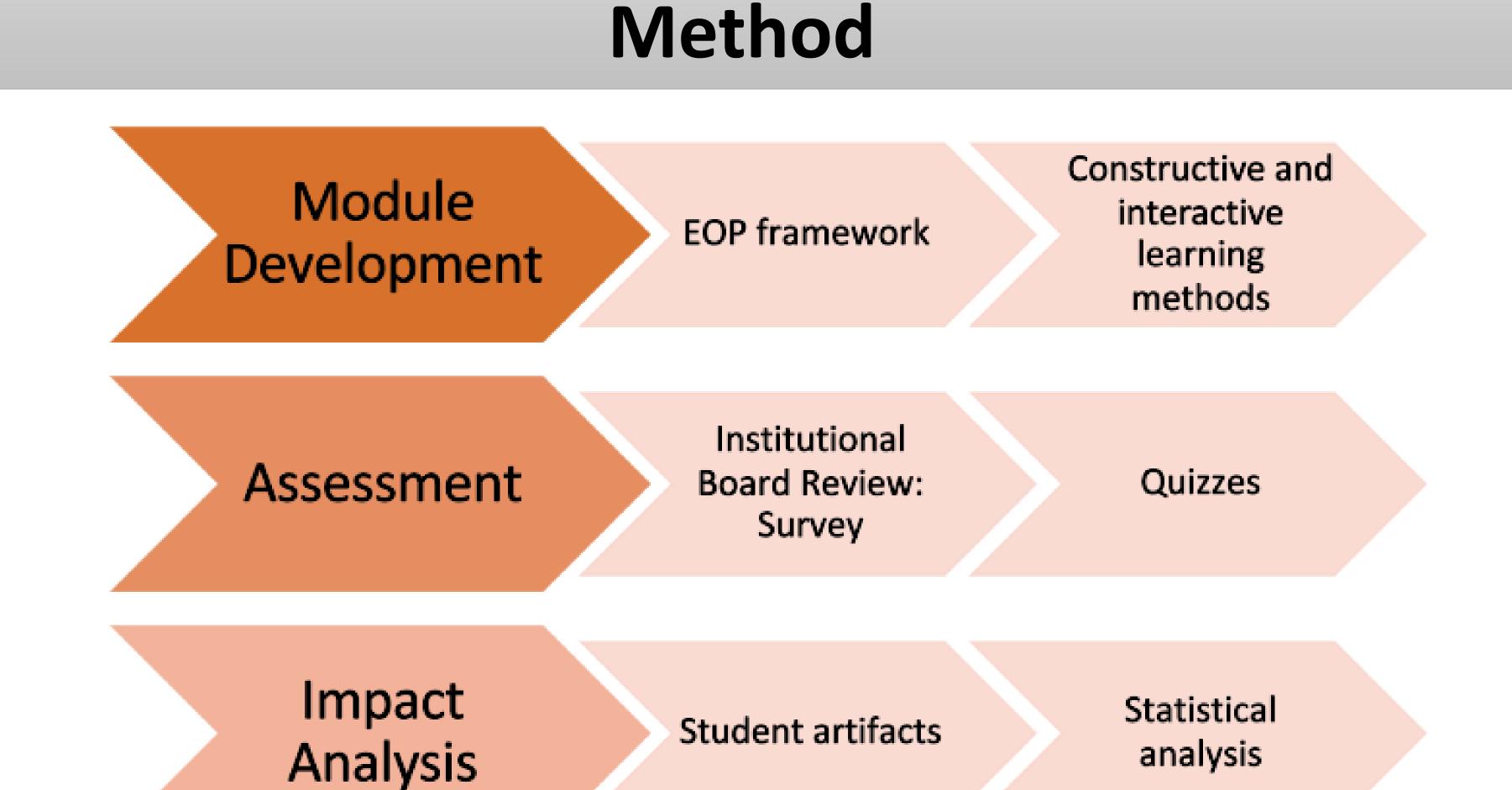
Sustainable Manufacturing Across the Undergraduate Engineering Curriculum

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Introduction

- Western New England University is dedicated to entrepreneurial minded (EM) learning in engineering & sustainability
- Faculty members involved in this project are leaders in EM and continue to bring pedagogical change to the curriculum (KEEN 2024)
- Intentional inclusion of sustainability modules in all years (1st Senior)



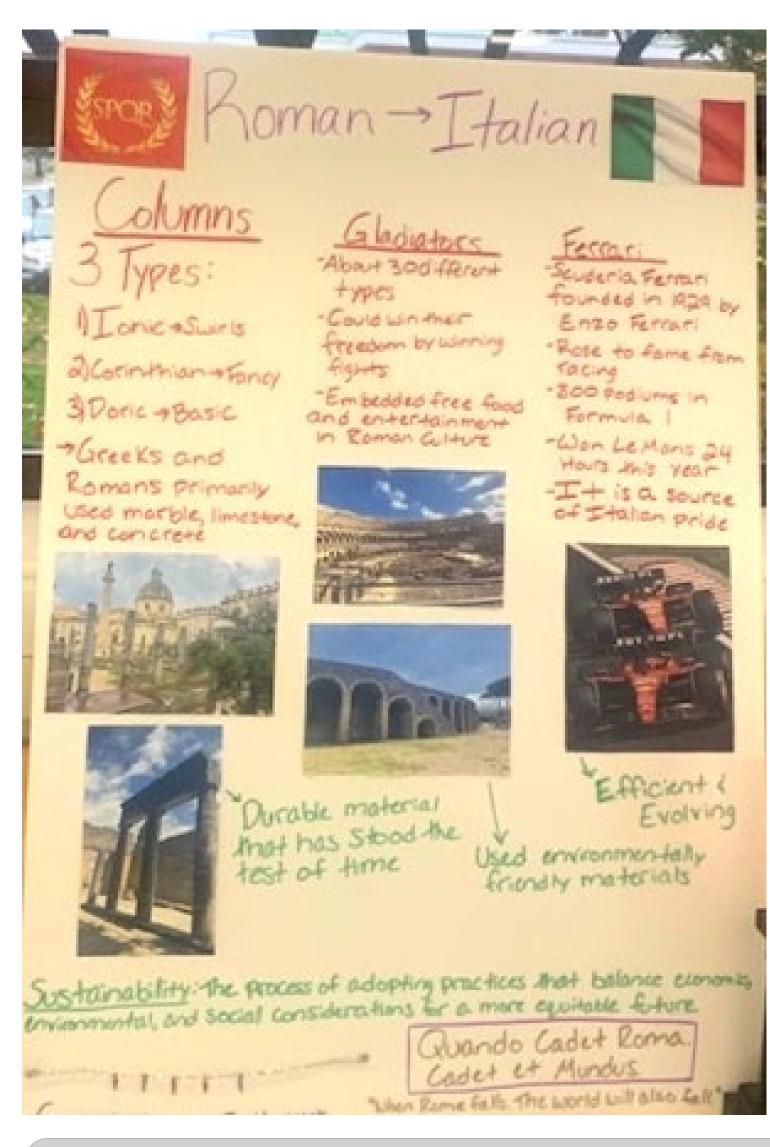


Student Artifacts

Culture in Design

Sustainable Prosthetic Feet

Medical Waste Streams











- CAD Modeling
- 3D Printing Wet Layup
- Resin Molding Silicone molding

Sustainable Materials:

- Recycled plastics/rubber
- Recycled paper Coconut fiber
- Rice paper

Design Assessment:

- Best sustainable design Strongest foot
- Best light-weighting
- Most material efficient











Impact & Next Steps

Approximately 100 students were impacted by these modules

• Students expressed appreciation for sustainable manufacturing tools, environmental impact assessment and consideration of DEI during design process. Many mentioned they had never had any learning like this.

Next Steps:

- Data analysis & write ASEE paper
- Advocate for lab space for student training & obtain resources
- . Create an annual course for all engineering students

Acknowledgements

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