Implementation of Engineering Sustainability in Engineering curriculum at UMES

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Introduction

The team from UMES proposed to implement sustainable engineering modules in two engineering courses: ENME 346 Heat Transfer and ENGE 476 Senior Design Project. The objective of this project is to incorporate the EOP sustainability framework into the engineering curriculum at UMES.

Procedure/Methods

Course	Level	Learning Modules	Methods
Heat Transfer	Junior	Introduction to sustainable engineering	Videos/Examples/In class discussion/Homework
		Whole system mapping	Videos/Examples/In class discussion/Homework
		Energy effectiveness	Videos/Examples/In class discussion/Homework
		Greener material	Videos/Examples/In class discussion/Homework
Senior Design Project	Senior	Whole system mapping	Example/In class discussion/Design project

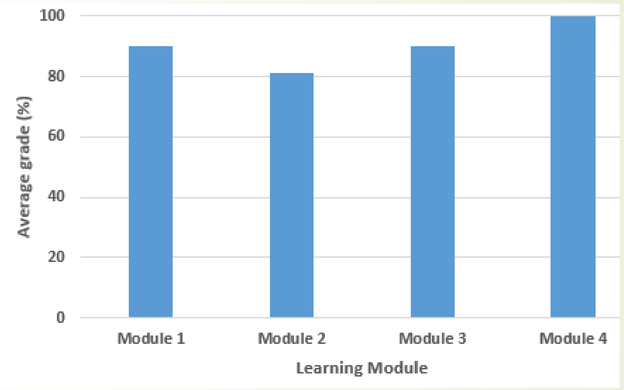
Progress

In Heat Transfer, proposed four modules are implemented. In Senior Design Project, whole system mapping module is implemented. Assessment is done through class discussion, homework assignment, end of semester survey.

Evaluation and Impact

Evaluation:

1. Class discussion;
2. Homework Assignment;
3. End of semester survey.



Impac

1. Opportunities for minority students from HBCU to gain knowledge about engineering sustainability.

2. Raise the awareness of the global sustainability issues.

References

[1]. https://venturewell.org/

[2]. http://www.designlife-cycle.com/

[3]. http://productdesign.green/

[4]. The Engineering for One Planet Framework: Essential Learning Outcomes for Engineering Education.pdf

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