

# Welcome to ENGR 310!



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STATE UNIVERSITY

College of  
**ENGINEERING**

Mountains & Minds

# Instructional Team

- Durward Sobek (IE) – lead instructor
- Gene Kuntz (EE) – lead team advisor

## Team Advisors

- Kara Boettcher (ChE)
- Nachiket Joshi (ME)
- Len Lutz (Materials Eng.)
- Mandy Rutherford (CE)
- Bob Wall (CS)



# Course website

[www.coe.montana.edu/engr310](http://www.coe.montana.edu/engr310)



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# The Engineer of 2020

- Strong in math and science.
- Views design through humanities, social science, and economics lens.
- Creative.
- Works in interdisciplinary teams.
- Shows leadership.
- Welcomes underrepresented groups.
- Adaptive to changing global landscape.



# In which of these are you getting good preparation at MSU?

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# What is Engineering Design?



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# What is Engineering Design?

“...systematic, intelligent generation and evaluation of specifications for artifacts whose form and function achieve stated objectives and satisfy constraints.”

-Dym & Little, 2004



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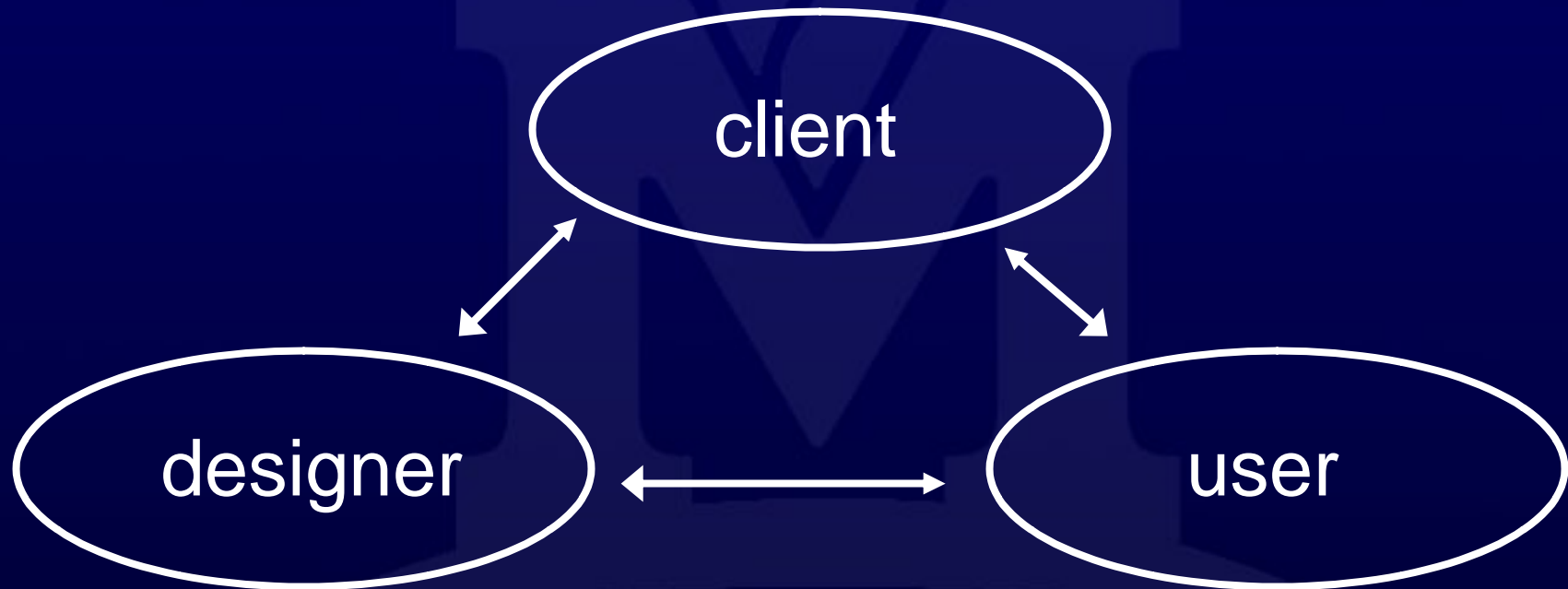


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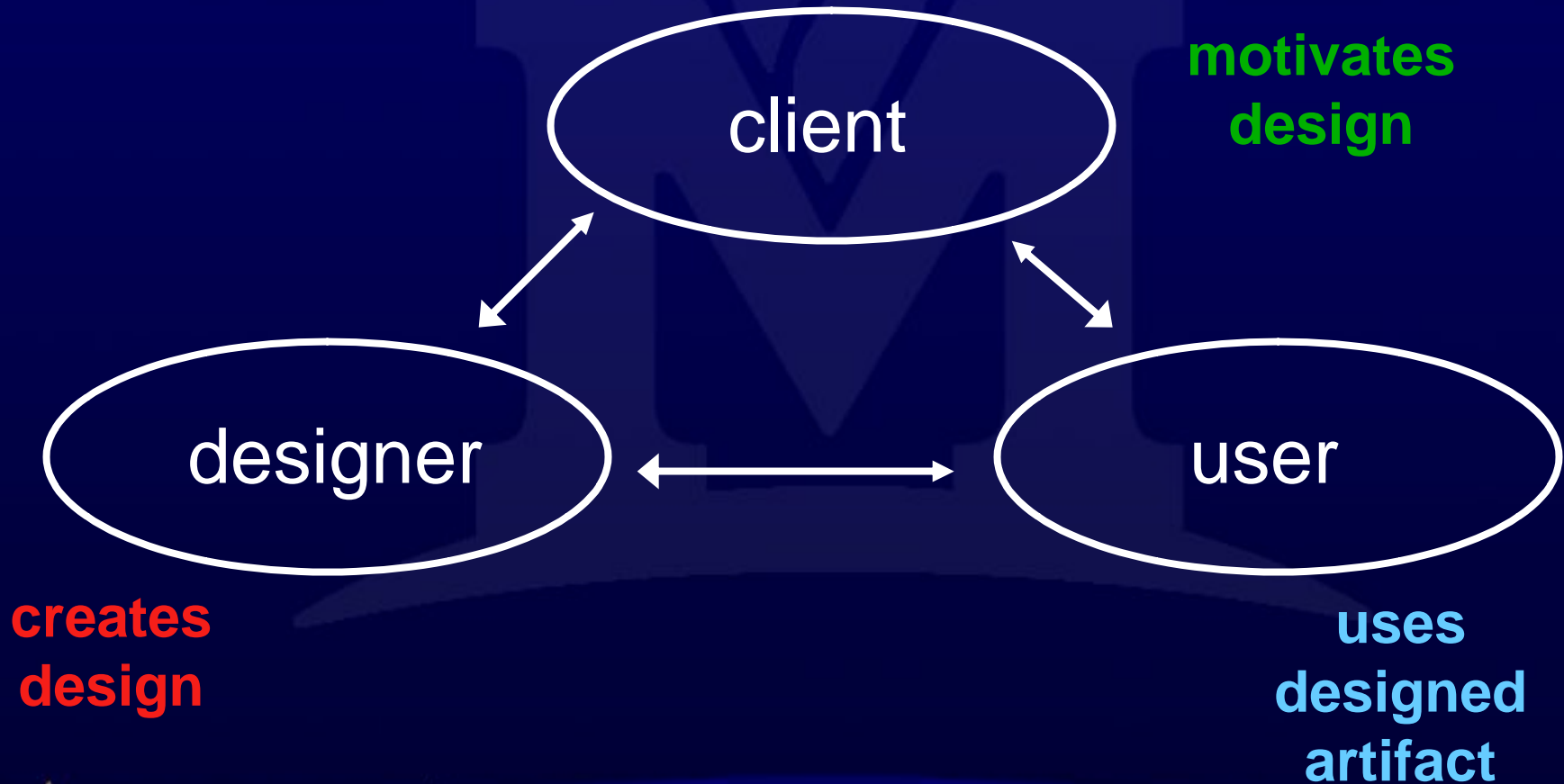
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# Who Sets Objectives and Constraints?



# Who Sets Objectives and Constraints?



# Design in Engineering is:

- Ill-structured → cannot apply a formula
- Open-ended → >1 solution possible
- Complex
- Must integrate many pieces.
- Must integrate with environment

