Running Lecture Outline: Doctoral Seminar

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Contents

1 27-AUG-24

1.1 Miscellaneous

This class is in Institute Hall. Tuesdays Thursdays at 12:30 PM

1.2 Faculty Intro

Dr. Risa Robinson (MIE). I've met her a couple of times already.

1.3 Syllabus

Syllabus is in myCourses. Class meets only once per week. Thursday time is for special speakers, if applicable. Primarily, meet on Tuesdays.

Class is generally to provide awareness of research and their societal context. More specifcally, this class asks:

Remark 1. *How can you communicate effectively?*

TechComm need not be persuasive.

1.4 Scientific vs Engineering Research

So, what exactly is research?

Definition 1 (Research)**.** ***Research*** *is the intellectual process to create new knowledge.*

This is essentially language building. Measurements prove or disprove our understanding of such theory or data.

Definition 2. *Inductive inference moves from observations to a more general conclusion or hypothesis. – this is scientific method/research*

Definition 3. *Deductive inference is more specific knowledge derived from more general principles.*

On the other hand, engineering research is new knowledge in the form of a new entity of tangible existence.

So, ultimately, what is scientific method/research?

Definition 4. *(Scientific Method) The Scientific method is the principles and procedures for the systematic pursuit of knowledge involving recogntion and formulation of a proven collection of data through observation and experiment, and the formulation and testing of hypothesis.*

Only a sith (or a mathematician) deals with absolutes. For that reason, we use statistics, because we're not sure. Engineering research contrasts from this philosophy because it deems to *create something new.*