

AE-410/510 – THE COURSE THEMES

A little more depth
Please sit with your groups

How does this all Come Together into Intelligent Building?

- The BIM model will be the center of information throughout the building life.
- Everything will have sensors – many of them
- Everything will communicate – the Internet of Things. (tag:IOT evernote)
- Most if not all building components will be manufactured directly from the BIM database
- Those that are assembled will increasingly be assembled by robots

Robotics

- Aspects
 - Sensors
 - Communication
 - Internal
 - External
 - Computation
 - Coordination
 - Recognition
 - Planning
 - Movement

Artificial Intelligence (AI)

- What is it? (Tag AI Evernote)
 - The ability to make complex decisions based on knowledge & learning
 - Turing Test
- Why is it important?
 - Essential to many fields
 - Robotics
 - BIM - in future
- The varieties of AI
 - Neural Networks - hot now
 - Expert Systems
 - Multiple others

Robotics & AI - Group Question

How relevant are Robotics and AI to our field? 10 min

- One member produce post
 - Summarize group's opinions or disagreements
- It will address multiple topics so don't publish now

Start a group post for today

- Tag it with your Group's ID
- Also tags for each topic

Construction/Manufacturing

- State Today
 - CNC from drawings
 - Aerospace Building Directly from Computer
 - Our industry is 10-20 years behind
 - Why?
- 3D Printing – The Future?
 - Requirements of Materials
 - Speed

BIM (Evernote tag:BIM)

- The State Today
 - Large Projects Use it
 - GSA and other require it
 - Small projects – “old” methods still prevalent
- What’s Going on
 - Parametric Design – what is it
- The Issues
 - Data Exchange
 - Legal liability
 - File Size

Construction & BIM - Group

Question

How relevant are the technologies presented to our field? - 10 min

- One member continue post
 - Summarize group's opinions or disagreements
- It will address multiple topics so don't publish now

Data & Networks

- How much data?
- What do we want to do with it?
- How do we store it? Databases
 - Amazon - Drone Search of a Gigantic Database
 - IB Term Project DB as example of personal
- Characteristics of Data

Sensors

- The State Today
 - Expensive, large, power-eating
- The future
 - Smaller, cheaper, environmental powered
- Sensor Characteristics ([evernote:sensor](#))

Data/Networks, Sensors -

Group Question

How relevant are these topics to our field? 10 min discussion & post entry

- One member Complete post
 - Summarize group's opinions or disagreements
- Complete the post & publish it

What Did We Conclude

Now look at the other group's posts 5 min

- Be prepared to comment on how your group agrees or differs from others

What's Due Next Week

- Blog on Future
 - Subtopics by Group
- Comment on other people's blogs in your group
 - Please don't just say "nice work"
 - add something useful
 - If you add comments to another person's post be sure to link those comments or repeat them in your own post
 - Even if you post early return and look, perhaps modifying your own post

The Assignment

Week Due	ID	Type	Topic	Comment	Group-A	Group-B	Group-C	Group-D	Group-E
2	B1	Reading	Future	Groups will each address the following topics by reviewing the "tags" in Prof. Mitchell's shared Evernote notes site. Look at each tag separately	<ul style="list-style-type: none"> • AI • Computer • Software • future 	<ul style="list-style-type: none"> • BIM • 3D Printing • Structures • future 	<ul style="list-style-type: none"> • Robotics • AI • 3D Printing • future 	<ul style="list-style-type: none"> • HVAC • sensors • AI • database • future 	<ul style="list-style-type: none"> • Database • Network • Sociology • future