



Human-Machine Systems

LAB 9 HMS EXPERT SEMINAR

HUMAN FACTORS ENGINEERING EXAMPLES: WHAT'S BEEN GOING ON?



IE 4523

Spring 2024

Due: Th 3-28 Presentation in Lab; Slides, Docs, and Write-up by 11:59 PM **later** that night

Professor Jaeger-Helton

You have chosen -or will choose- a topic associated with literature links and examples related to Human Factors Engineering and Human-Systems Integration/Human-Machine Systems. Review these leads **as a starting point and** search for additional related credible, scholarly resources that will help clarify or expand on the subject contained in your topic listing to present to the class in a short seminar.

The Learning Objectives for this activity are to have you:

- Develop and demonstrate expertise in a Human-Systems Integration construct related to course content.
- Prepare and deliver a teaching module that educates and engages the class using learning principles and examples covered in the course.
- Incorporate and infuse productive use of Generative AI to explore HMS topics and organize presentation elements.
- Rely on and refer to scholarly research and deliver those findings to the class in a relatable, engaging, memorable, and applicable manner.

There is an overwhelming amount of information out there for most topics. It is your mission to curate, filter and prioritize it and capture the most useful and practical essence **as it relates to HMS**. Find the research and/or data out there (as applies) and represent it fairly. I would like you to become a considerable expert in your subject matter!

You will work in your existing HMS Lab team for this assignment. Together during part of Lab time and outside of class:

- Prepare a presentation (~8-10 slides) that addresses the significance of the selected topic to the human element or component of a system. Prepare to answer any and all of the following issues bulleted below as applicable in a ~14-minute presentation. Be mindful of the time limit.
- If your literature links or examples are older, consider what has been learned or what has changed in relation to that topic since then. Find additional scholarly credible links and base your messaging on research.
- Generate some visuals for your presentation and, if you show a video, keep it to <1 minute.
- All members must contribute and participate in the presentation relatively equally.
- You must engage the class in some way, such as discussion, poll, puzzle, myth-busting ... something quick, clever, and relevant.
- You do **not** need to submit a full report. Instead, upload your PowerPoint and your word-processed write-up/script that includes the main points of your presentation, plus your activity plan. Organized bullets, outlines and tables are fine, as suitable. Please use subheadings.
 - Include what each team member covered.
 - Outline your engagement/activity plan, plus any links or docs used in your activity.
 - In the presentation, use linkable references for all resources, including the ones originally provided.
 - EVERYTHING that is copied from an outside source MUST have quotes and be referenced
 - Your write-up can be concise, in bullets, outline, or paragraph format
 - A cool cover page/header is always welcome.

Make this a valuable resource for you and your colleagues to learn from and refer back to. Anything that has not been specified is license for *your* creativity! Enjoy!!

Notes on your research and writing:

You MAY use any generative AI to explore and help prepare your presentation and talking points. Take every opportunity to learn from these sources in this case, provided you trust their validity.

- Clearly state WHETHER you used Generative AI or NOT in your planning, presentation or work.
- Provide a list of all distinct prompts you entered into the AI composer. State which engine you used.
- All additional sources you use must be in LINK form and be accessible for inspection.
- You must not use ANY notes when presenting, so you must know your 3-4 minutes of information.
- Your slides should then not be text-heavy; they should enhance and illustrate your presentation.

SUBMIT to Canvas: PowerPoint, w/ linkable references Notes/Script document w/ all names Activity Plan

- | | |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> What is it? | What is the nature of the topic and the sources you were provided as prompts?
In your opinion, are they credible sources –on what basis? |
| ex)) | “The topic was brain-machine interface. We had an article from Mechanical Engineering ...”
“This related to being certified in HMS-related competencies. We had a link to an ad ...” |
| <input type="checkbox"/> What additional resources did find and study? | Describe where you looked for additional reliable and/or scholarly information to provide an informed overview of this topic/area.
Record the sources you sought out, found and used (not Wikipedia). |
| ex)) | “We found a feature in Forbes Magazine about [name topic]”
“Then we went to google scholar and located 2 research papers that found ...” |
| <input type="checkbox"/> Summarize: | Review the main points –and common themes from your resources. |
| ex)) | “A new technology is being developed that is capable of ...”
“The software program assists design engineers in measuring ...” |
| <input type="checkbox"/> Advantages | Discuss benefits or merits (or one side) of the technology, program, principle, or topic.
<i>As is fitting:</i> Indicate the primary positive features; include those that are named and additional benefits that you think of yourself. |
| ex)) | “This will improve functioning in the following areas ...”
“This could also help other fields if it could be used for ...” |
| <input type="checkbox"/> Disadvantages | Discuss concerns/drawbacks/challenges (or other side) of the technology, program, topic.
<i>As fitting:</i> Indicate principal negative features or issues; include those that are named and/
/or additional counterpoints that emerged in your research or that you thought of yourself. |
| ex)) | “While it can be valuable to certain operations, we are concerned that the following issues may be overlooked ...” “Our research found a study that showed a dissenting view ...”
“We have our doubts about this aspect of the technology because ...” “A challenge is ...” |

Opinions & Other

**Provide additional thoughts on the subject in terms of HFE – How can we USE this info?
Also you may provide a *brief* opinion and/or new cool nugget of information you learned!**



Apply critical thinking, experience, and current HMS principles to a critical analysis of your topic. Provide additional observations and recommendations as appropriate.

Your thoughts? Anything new? Interesting? Trivia? Unique factoid(s), Additional activity?