IE 203-001: Applications of Computer Graphics in Industrial Engineering

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The pace at which companies adopt and learn to use digital technologies effectively will also vary. Some will be slow to adapt and eventually disappear... some will become world leaders... it is a huge race in the jungle!

In the next 10 to 15 years, factories and plants across industry sectors will be high-tech networked engines of mass customization, able to respond quickly and effectively to changing customer and market demands (yes, 'on-line, Excel for executable code. You'll also see some visio-drawn graphics in your eLearning Pack. Please note, that the additional videos in your eLearning Pack are rendered using the latest MPG4 standard. To play these you'll...
Please make sure to create a caption and a short description for each:
- How individual operator / associate efforts contribute toward success?
- What are our key measures?
- What are our goals?
- A visual control that is intended to actually control or guide the action of the production or administrative team members.
- Indicates when help is needed (e.g. a display indicating what help is needed and where)
- Indicates non-conformances (e.g. an out of control situation)
- Show, that every tool, fixture, device, etc. has a place and everything is in its place (e.g. a tool rack in which tools have a designated place)

Sustainable, green visual factory analysis

Please note, that this is another very important exercise towards developing your object-oriented thinking, analysis and design skills. It can also include some programming. Also, this assignment helps you to learn about:

Assignment 4 outline:
Assignment 4: (10%) Deadline: by November 4, 'My 20 visual models and
Computer Graphics in IE requirements analysis using computer graphics. Process modeling using computer graphics. Visio for PC users and OmniGraffle for Apple Mac users. Software lab. exercises: graphical programming. Interactive exercises / video conferencing. These activities are all part of each assignment now and therefore should be documented in your web page, just as the rest of your assignments are. (All in one; nice object-oriented principle; not zillions of can work in the real-world.

Assignment 3 outline:
These are useful instructions in
(FREE access)

Article Published in Systems 2015, 3(2), 27-44; doi:10.3390/systems3020027; Received: 9 February 2015 / Revised: 14 April 2015 / Accepted: 24 April 2015 / Published: 4 May 2015; Show/Hide Abstract and Link to Full Article

Subject area. This is particularly important to some foreign students who are not used to get their news via the Internet. You suppose to read these articles and then discuss at least THREE (3) of them with at least one more

In more detail, Part 2:

In more detail, Part 1: the web page design:

4. Class: NJIT Week 4:

Prepare this in paper format for a standup presentation, or on your screen in Word, or PowerPoint, but as soon as you have your web page up on the Internet, put it up as Assignment 1. (You can add images, text, video clips, etc.)

Your final project, due at the end of the term, is the design and documentation of your own (i.e. the 5th company's) digital factory networking model.

More on
It also helps us to understand more about object-oriented thinking, analysis, design and even programming.

Please find below the links to the sample images of the applications for visual factories (Sort, Set in Order, Shine, Standardize, and Sustain). Interactive multimedia development and validation/quality control session and student presentations. Continuous assignment/project improvement session based on team and class feedback.

1. Product/process design analysis
2. Document and track the green, sustainable manufacturing/assembly/disassembly aspects, the requirements, the process, and the disassembly risks.
3. Defects
4. Inventory
5. Transport
6. Identify wastes that can be eliminated from the process, including the following wastes:
7. Redesign the process to eliminate wastes, with a strong focus on the integration of systems
8. Implement a realistic and well-balanced, satisfactory solution. (Note: perfect solutions are rare nevertheless realistic solutions can be achieved in many cases.)
9. Measure time savings in redesigned process

This is a very practical and useful problem solving process flow:

Assignment 6 outline: Option A or B: ASSEMBLY or DISASSEMBLY:

4.a. Watch the Project Video and write an article describing the video (a). What are the ethical aspects (see more at the end of this syllabus).
4.b. Review the 'V1' and 'V2' full length videos. Write 200-250 words on each video: explain what you have learned from each video (a) and how you can use the learned information in your own company (b)?

b. Document the green, sustainable manufacturing/assembly/disassembly aspects, the requirements, the process, and the disassembly risks.

2. Communicate in an effective manner, utilizing objects and content. (strong emphasis on object-oriented programming).
3. Email and/or video conferencing. These activities are all part of each assignment now and therefore should be documented in your web page, just as the rest of your assignments are. (All in one; nice object-oriented design).
Some more student laboratory activity and ASQ event pictures in this live class include the following:

Computer Controlled Machine Programming, Based on Object-oriented Principles: CNC laboratory preparation information:

Please explore this site for some useful information on our computer controlled CNC machines and related object-oriented machine programming methods, tools and technologies. Haas Automation Inc. USA is kindly sponsoring us. Their machines are widely used by USA universities, as well as industry all around the world. (We have now access to our IME CNC machine, as well as to the NJIT Makerspace computer controlled machines. This modern facility enables us to learn more about object-oriented programming, testing, validation and even quality control, with a strong focus on the integration of systems.)

Our machines are similar to what you will see here:

http://www.haascnc.com/home.asp#gsc.tab=0

Also, there is some useful info. on CNC programming and software here:

https://www.cnccookbook.com/cnc-software/?utm_source=ActiveCampaign&utm_medium=email&utm_content=21+kinds+of+CNC+software%3F++%5B+learn+what+each+one+does+%5D&utm_campaign=21KindsOfCNCSoftware

EXPLORE and enjoy!
Nonverbal communication includes a number of elements, so I manipulated only five elements:

- Pay attention to you. By adjusting your presentation to the type of audience, it shows an extra effort to them, and genuine care on your part that you want them to understand the message.

- Be concise then you're at least halfway there. When interacting with people you are trying to get a reaction from the audience.

- Organize your slides. This is particularly important to some foreign students who are not used to get their news via the Internet. You suppose to read these articles and then discuss at least THREE (3) of them with at least one more...

- Practice ethical communication and transparency in your company.

- Organizations focus on the bottom line. High-performing organizations focus on creating real value for multiple stakeholders. While financial performance may be the lifeblood of the organization, it is not the only reason for its existence.

Suggestions for ethical engineering (IE) questions to be discussed:

- Mr. Ewbank said in the complaint. "Many current and former Boeing employees have privately discussed problems with the design and decision-making process on the 737 Max, outlining episodes when managers dismissed engineers' recommendations or put..."

- In this class we are going a lot further. We don't just teach OO thinking and programming, but we do it with advanced computer integrated machines, like 3 axis and 5 axis CNC milling machines, 3 axis and 4 axis CNC lathes, 3...
Anthony Masters studies at NJIT.

11. Do you think it is important to learn spreadsheet programming methods in the IE context? [yes] [no]

Please note, that the purpose of all of my surveys is Continuous Quality Improvement.

11.59 pm, December 10, 2020 = ABSOLUTELY THE LAST DAY TO SUBMIT any assignments! All submissions MUST be electronic = by email

3. Position in the room.

Nonverbal communication includes a number of elements, so I manipulated only five elements:
systems for real-world applications.

2. Engage Students where Disciplines Converge – Draw on knowledge and methods across disciplines to solve complex, real world problems in STEM using innovation, creativity, and initiative.

These are the main goals, that are being actively pursued to support the Strategic Plan’s overarching vision:

It is intended to serve as a “North Star” for the broader STEM community as it collectively charts a course for the Nation’s success and is responsive to the requirements of Section 101 of the America

About Strategic Implementation Plan on STEM Diversity in this Class...

As an example, in 2019 we have started to use the amazing new NJIT Makerspace facility / lab. complex to illustrate students the way an ideal digital smart factory / digital / networked factory could look like. In

identify the source of a problem and to establish the action most likely to resolve it.

Continual improvement, however, refers to actions taken to optimize a specific characteristic or a set of characteristics even though performance of the characteristics may be at the acceptable level to the

objective, audit results, analysis of data, corrective and preventive actions and management review.

Continuous Improvement in this Class...

CODE OF ETHICS (ASQ); more here:

• Do not use the intellectual property of others without permission.
• Do not plagiarize.
• Do not use confidential information for personal gain.
• Allow diversity in the opinions and personal lives of others.
• Advance the role and perception of the Quality professional.
• If some work is left incomplete, the next step will not start.
• A mechanism to automatically correct operational errors before proceeding with production.
• Active design experience too, that they can document in their assignments. This is a semester long activity, effecting every assignment. (Note, that some of these concepts are very new to most students,

8. to treat fairly all persons and to not engage in acts of discrimination based on race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression;

* Being a nice human being etc.
* Avoid cheating
* Going against what you know is wrong

A moral is the code of conduct that you develop over time and set for yourself to follow, just like

Ethical

ethics

by the society, which also equate to the moral standards of human beings. An engineer with ethics, can help the society in a better way.

Biological Evaluation Of Medical Devices - Part 17: Establishment Of Allowable Limits For Leachable Substances. ISO 10993-17:2002 specifies the determination of allowable limits for substances leachable

ISO 9000 FAMILY – QUALITY MANAGEMENT

This is a good sample of standards, that are very useful for all of us to learn (please note, that if a link does not work, pls. search the key terminology as indicated, on the web.):

- Workplace Safety Standards Home
- Background
- ISO 9000 FAMILY – QUALITY MANAGEMENT
  - ISO 9000-9004:2015
  - ISO 9001:2015
  - ISO 9004:2010
  - ISO 9000:2015
  - ISO 9001:2015
  - ISO 9004:2015

- Background
- ISO 9000 FAMILY – QUALITY MANAGEMENT
  - ISO 9000-9004:2015
  - ISO 9001:2015
  - ISO 9004:2010
  - ISO 9000:2015
  - ISO 9001:2015
  - ISO 9004:2015
- This is a good sample of standards, that are very useful for all of us to learn (please note, that if a link does not work, pls. search the key terminology as indicated, on the web.

According to the ISO 9000 FAMILY – QUALITY MANAGEMENT, the standards can be used in this class

ref.:

https://www.tutorialspoint.com/engineering_ethics/engineering_ethics_introduction.htm

https://www.encyclopedia.com/science/encyclopedias-almanacs-transcripts-and-maps/engineering-design-