Nuclear Engineering Curriculum eXchange

Academy for Excellence in Engineering Education Strategic Instructional Innovation Program

Retrospective Workshop

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What is the problem?

Nuclear community is small

We all basically teach the same "early classes"

Nuclear fuel cycles
Some early introductory class (Lamarsh)
Risk assessment (not necessarily nuclear but I teach it)
Shielding

Four factors has been used since we started making reactors

Neutrons don't change

What is the solution?

Profs. Huff and Davis proposed a novel way to reduce duplicating the same material over and over

"Could curriculum development for university courses operate as well as open-source software development does?"

Use the Github Workflow concept to develop courses

Collborators from UIUC and 5 other Nuclear Engineering University programs

From the Big Fish (Paul) to the little fish (me)

Educational experience

Past

I was a GSI at Berkeley for nearly all of the courses in the department
Overlapping material between classes
Tons of slides
No central location

Current

Exclusively online when I started at Diablo Valley College.
Lectures on prezi - now rendered with a script in markdown on Github
Class management on piazza
At Idaho, I went to a workshop about OER and developed them for both classes

Outcomes for NECX

Come up with a cool name

Not as experienced in GitFlow as everyone else
I would like to develop that skill for class/research

Some of the materials developed here should be applicable to my NE course(s)

Some material I have might be useful too

What other courses can this be used for?

Lessons Learned

Main success is the definition of the node

Granularity

Probably the most discussed topic

And most fundamental

Defining learning objectives (I do this now in my lectures/assignments)

Related assessments per learning objective

Git Workflow was also an important skill

My node went through pull request - review - merge!

The contributions document was also important

So we can bring in others to add content

What I'd like to do going forward

One more node or so by the end of the year

I'm teaching the introduction course in the fall where I think the content is most relevant to nodes

As I'm updating slides, it should not be too too hard to make some more nodes

Actually have several in my local space that need to be cleaned up

Other courses to consider - risk assessment, MCNP

NECX

NECX GitHub


The
NECX
Experience
The
Allerton
Sessions


1. Satisfying dependencies
2. Granularity
3. Empty Garden (written by Elton John)
4. Dr. Jekyll and Mr. Markdown
5. The Ballad of the Large Room
6. 927: A New Standard
7. Creme Fraiche
8. Riding the SCORM out
Vocals: S. Skutnik
Horns: R. Borrelli
Guitar: J. Roberts
Drums: Scopz
Keyboard: 'Southside' Huff
Bass: N. Davis
Producer: P. Wilson