2017 IDEAS FSS-Vis Syllabus

Sept. 5 – 15, Tech F491

Instructors :

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Mitch Barklage (MB; EPS) : mitchell.barklage@northwestern.edu
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Materials available on AG's GitHub site

Course Schedule Summary :

First week (Sept. 5 – 8) : Instructor led learning (required attendance)

- 9am – 12pm : lecture / discussion / hands-on tutorials
- 1pm – 4pm : independent work and (short) "show and tell"

Second week (Sept. 11 – 14) : Independent projects

- 9am – 12pm : open lab, required attendance
- 1pm – 4pm : open lab, optional attendance on Sept. 11 – 13 (required on Sept. 14)

Sept. 15, 12pm – 2pm in Tech F210, Final Demos : 10-minutes per student + questions (+ pizza)

First Week Schedule Detail :

Tuesday Sept. 5 : Introduction, Creating an effective graph, & matplotlib

- 9:00 – 9:15 : course introduction (AG)
- 9:15 – 10:45 : Introduction to visualization design and cognition (SF)
- 10:45 : coffee & bagels
- 10:45 – 12:00 : How to create an effective graph + hands-on Excel (FE) and matplotlib (AG)
- 1:00 – 2:30 : Students design their own plot in matplotlib
- 2:30 – 4:00 : Students "show and tell", and discussion with AG and FE

Wednesday Sept. 6 : Generic Mapping Tool (GMT)

- 9:00 – 12:00 : Lecture and hands-on with GMT + exporting to a movie in Photoshop (MB)
- 1:00 – 2:30 : Student projects with GMT
- 2:30 – 4:00 : Students "show and tell", and discussion with MB

Thursday Sept. 7 : Web-facing visualizations with D3.js

- 9:00 – 12:00 : Introduction to web-facing visualizations + hands-on with D3.js (FE)
- 1:00 – 2:30 : Student projects with D3.js
- 2:30 – 4:00 : Students "show and tell", and discussion with FE and AG

Friday Sept. 8 : Survey of other useful visualization software

- 9:00am coffee + bagels
- 9:00 – 12:00 : 15 minute hands-one demos of most of the following
  - Volumetric Data : ParaView (AG), VisIt
  - Web-facing Tools : x3dom (AG), Bokeh (AG), Plotly (FE), WebGL (AG)
  - General Interactives : OpenGL (AG), Processing
  - Artist Tools: Photoshop (MC), Illustrator (MC), Maya (MC), Blender , ffmpeg, Image Magick
  - Python Tools : Seaborn (AM)
  - Mapping : NASA World Wind (MB)
- 1:00 – 2:30 : Student exploration of these tools
- 2:30 – 3:30 : Student "show and tell"
- 3:30 – 4:00 : Discuss expectations of 2nd week project

Second Week Schedule Detail (required hours in red):

Monday Sept. 11 : Begin visualization projects

- 9:00 – 12:00 : AG meets 1-on-1 with students to discuss projects ; students work independently
- 1:00 – 4:00 : students work independently, AG available for questions

Tuesday Sept. 12 : Continue working on visualization projects

- 9:00 – 12:00 : AG meets 1-on-1 with students to check in; students work independently
- 1:00 – 4:00 : students work independently, AG available for questions

Wednesday Sept. 13 : Half of visualization project must be completed before noon

- 9:00 – 12:00 : AG meets 1-on-1 with students to check in; students work independently
- 1:00 – 4:00 : students work independently, AG available for questions

Thursday Sept. 14 : Final day before presentations

- 9:00 – 12:00 : students work independently, AG available for questions
- 1:00 coffee + snacks
- 1:00 – 4:00 : AG meets 1-on-1 with students to discuss demos; students work independently

Friday Sept. 15, : Final Demos

- 9:00 : Final Demo due to AG (1-page description + Picture/Video/Website + Visualization Files)
- 12:00 – 2:00 : Tech F210, Final Demos : 10-minutes per student + questions (+ pizza)