

# 2018 IDEAS FSS-Vis Syllabus

Sept. 4 – 14, Tech F491

## Instructors :

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## Materials available on AG's GitHub site

## Course Schedule Summary :

First week (Sept. 4 – 7) : Instructor led learning (required attendance)

- 10am – 12pm : lecture / discussion / hands-on tutorials
- 1pm – 4pm : independent work and (short) “show and tell”

Second week (Sept. 10 – 13) : Independent projects

- 10am – 12pm : open lab, required attendance
- 1pm – 4pm : open lab, optional attendance on Sept. 10 – 12 (required on Sept. 13)

Sept. 14, 12:30pm – 2pm in Tech F210, Final Demos : 15 minutes per student, including questions (+ pizza)

## First Week Schedule Detail :

Tuesday Sept. 4 : Introduction, Creating an effective graph, & [matplotlib](#) (+bagels)

- 10:00 – 10:15 : course introduction (AG)
- 10:15 – 11:15 : Introduction to visualization design + How to create an effective graph (FE)
- 11:15 – 12:00 : Hands-on general plotting utilities (FE)
- 1:00 – 2:00 : Hands-on python+matplotlib (AG)
- 2:00 – 3:00 : Student projects with python+matplotlib
- 3:00 – 4:00 : Students “show and tell”, and discussion with AG and FE

Wednesday Sept. 5 : Web-facing visualizations with [D3.js](#)

- 10:00 – 12:00 : Introduction to web (FE)
- 1:00 – 4:00 : intro to D3.js (FE)

Thursday Sept. 6 : [Generic Mapping Tool \(GMT\)](#) and [D3.js](#)

- 10:00 – 11:00 : Intro to GMT (MB)
- 11:00 – 1:00 : hands-on with GMT + pizza in class lunch (MB)
- 1:00 – 3:00 : hands-on D3.js (FE)
- 3:00 – 4:00 : “show and tell” with D3.js

Friday Sept. 7 : Survey of other useful visualization software (+bagels)

- 10:00 – 12:00 : 15 minute hands-on demos of most of the following
  - *Volumetric Data* : [ParaView](#) (AG), [VisIt](#)
  - *Web-facing Tools* : [x3dom](#) (AG), [Bokeh](#) (AG), [Plotly](#), WebGL (AG), [shiny](#) (FE), [datavrapper](#) (FE)
  - *General Interactives* : OpenGL (AG), [Processing](#) (AG)
  - *Artist Tools*: [Photoshop](#) (MB), [Illustrator](#) (FE), [Maya](#), [Blender](#), ffmpeg, Image Magick
  - *Python Tools* : [Seaborn](#) (AG)
  - *Mapping* : [NASA World Wind](#) (MB), [cartopy](#) (MB), [basemap](#) (MB)
  - *R* : [ggplot2](#) (FE)
- 1:00 – 2:30 : Continued demos of above
- 2:30 – 3:30 : Student exploration of these tools
- 3:30 – 4:00 : Discuss expectations of 2<sup>nd</sup> week project

## Second Week Schedule Detail (required hours in red):

Monday Sept. 10 : Begin visualization projects (+bagels)

- 10:00 – 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. 11 : Continue working on visualization projects

- 10:00 – 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. 12 : Half of visualization project must be completed before noon

- 10:00 – 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. 13 : Final day before presentations (+bagels)

- 10:00 – 12:00 : students work independently, AG available for questions
- 1:00 – 4:00 : AG meets 1-on-1 with students to discuss demos; students work independently

Friday Sept. 14 : Final Demos

- 10:00 : Final Demo due to AG (1-page description + Picture/Video/Website + Visualization Files)
- 12:30 – 2:00 : Final Demos in Tech F210: 10 minutes per student, +5 minutes for questions (+pizza)