

Provisional Schedule DIGI-ESPIn (June 10) All times provided are in Mountain Daylight

Time

1/2 day Preparation - We will ask you to fill out a pre-course survey, prepare 2 slides to introduce yourself and install some software.

Day 1

August 12th

9:00-9:30 Introduction to ESPIn, intro to instructors and peer-mentors
9:30-11:00 Introduction to all participants, - 2 mins, 1 slide, pop-ups of participants
11-11:15 *Break*
11:15-12:00 [Science Lecture Open Source Modeling and Model Design](#)
12:00-1:00 *Break and/or Online Bring-Your-Lunch*
1:00-2:30 Introduction to version control in Git, Github, demo of commands
2:30-2:45 *Break*
2:45 - 3:30 Practice with linux and Git commands, set up a team Git repo
3:30 - 5:00 Review of basic Python programming with demos and assignment
5:00-5:15 Concluding notes, questions and suggestions of participants

Day 2

August 13th

9:00-9:30 Introduction to team project work and themes
9:30-11:00 Review Assignment, libraries relevant for Earth Surface Processes (part I)
11-11:15 *Break*
11:15-12:00 [Science Lecture LandLab Highlights and Grid Structure](#)
12:00-1:00 *Break*
1:00-2:30 Discussions on Team projects and setting goals for everyone
2:30-2:45 *Break*
2:45 - 3:30 Practice with numpy arrays, writing a function, plotting in matplotlib, git repo.
3:30 - 4:15 libraries relevant for ESP (part II) + landlab demos + assignment
4:15-5:00 Small teams practice with csv files, NetCDF.
5:00-5:15 Concluding notes, questions and suggestions of participants

Day 3

August 14th

9:00-9:30 Existing Models and Toolkits for Modeling Earth Surface Processes (including hydrology, vegetation), CSDMS resources,
9:30-11:00 Basic Model Interface with demo
11-11:15 *Break*
11:15-12:00 Science Lecture on the use of xarray datasets
12:00-1:00 *Break*
1:00-2:30 Review Assignment, libraries relevant for ESP (part III) + Landlab: under the hood: grid/nodes/faces, open/closed boundaries.
2:30-2:45 *Break*
2:45 - 3:30 Small teams/individuals practice with Basic Model Interface or Landlab

3:30 - 4:00 Landlab agent-based example (demo)
4:00-5:00 Discussion by Teams on Projects and set homework to work towards solutions.
5:00-5:15 Concluding notes, questions and suggestions of participants
5:30-7:00orso *Online Bring-Your-Own-Beer and Life-Photo-Challenge*

Day 4 August 17th

9:00-9:30 Team Reps present their project goal & work plan (4min talk/team)
9:30-11:00 Python Modeling Tool with notebook demos
11-11:15 *Break*
11:15-12:00 *Science Lecture: speaker and topic to be confirmed*
12:00-1:00 *Break and/or Online Bring-Your-Lunch*
1:00-2:30 Team Projects Hack
2:30-2:45 *Break*
2:45 - 3:30 Team Projects Hack
3:30 - 4:15 Demo of Pymt permafrost-landlab notebooks
4:15-5:00 Team Projects Hack
5:00-5:15 Concluding notes, questions and suggestions of participants

Day 5 August 18th

9:00-9:30 Teams Reps Report back from Hack Results (4min talk/team)
9:30-11:00 Programming best practices & Unit tests (Mark Piper)
11-11:15 *Break*
11:15-12:30 DISCUSSION PANEL CAREER DEVELOPMENT
4 speakers, to be confirmed, from the private sector as well as from academia, telling about the role of scientific software development in their career
12:30-1:00 *Break and/or Online Bring-Your-Lunch with panelists*
1:00-2:30 Team Projects Hack
2:30-2:45 *Break*
2:45 - 3:30 Team Projects Hack (dedicated to a specific unit test to their work).
3:30 - 4:15 Small teams/individuals practice with writing a unit test
4:15-5:00 Consulting with CSDMS software engineers & scientists to discuss their own projects
5:00-5:15 Concluding notes, questions and suggestions of participants

Day 6 August 19th

9:00-9:30 Teams Reps Report back from Hack Results (4min talk/team)
9:30-11:00 Team Hacks
11-11:15 *Break*
11:15-12:00 *Science Lecture: speaker and topic to be confirmed*
12:00-1:00 *Break*
1:00-2:30 Team Projects Presentations (20 min + 5 mins for Q&A per team)
2:30-2:45 *Break*
2:45 - 3:30 Team Projects Presentations (20 min + 5 mins for Q&A per team)

3:30 - 4:15 Exit Survey for Learning Assessment
4:15-5:00 ESPIn Graduation - *Online Bring-Your-Beverage with everyone*