

NHERI Center for Computational Modeling and Simulation  
of the Effects of Natural Hazards on the Built Environment (*SimCenter*)

### **Programming Bootcamp Agenda**

**Richmond Field Station, Building 454, Classroom**

#### **Monday, July 22, 2019 - Programming in C**

<b>Time</b>	<b>Topic</b>
8:30 - 9:30	Registration & Setup
9:30 - 10:00	Welcome and Participant Introductions
10:00 - 10:30	SimCenter Overview
10:30 - 10:50	Break
10:50 - 11:50	VM, Linux, and Git
11:50 - 1:00	Lunch
1:00 - 2:15	An Introduction to Programming
2:15 - 2:30	Break
2:30 - 3:30	The C Programming Language
3:30 - 5:00	Exercise
5:00	Training adjourns for the day

#### **Tuesday, July 23, 2019 - Abstraction, Struct & C++**

<b>Time</b>	<b>Topic</b>
9:00 - 9:15	Engaging and Collaborating with the SimCenter
9:15 - 10:15	Git - updating your repos
10:15 - 10:30	Break
10:30 - 11:00	Abstraction
11:00 - 12:00	Abstraction in C With Struct & Pointers
12:00 - 1:00	Lunch
1:00 - 2:15	Exercise
2:15 - 2:30	Break
2:30 - 3:30	Programming in C++
3:30 - 5:00	Exercise
5:00	Training adjourns for the day



**Wednesday, July 24, 2019 - Python**

<b>Time</b>	<b>Topic</b>
9:00 - 9:45	Python Datatypes
9:45 - 10:15	Object-Oriented Programming in Python
10:15 - 10:30	Break
10:30 - 11:30	File IO and Data Processing
11:30 - 12:30	Lunch
12:30 - 1:30	Data Visualization in Python
1:30 - 3:00	Exercise
3:00 - 3:20	Break
3:20 - 4:00	SubProcesss & Interaction with the OS
4:00 - 5:00	Exercise
5:00	Training adjourns for the day

**Thursday, July 25, 2019 - Data Gathering and AI**

<b>Time</b>	<b>Topic</b>
9:00 - 9:30	Webautomation using Python
10:30 - 11:30	Gathering Data using Python
11:30 - 11:45	Break
11:45 - 1:00	Visualization and Analysis using QGIS
1:00 - 2:00	Lunch
2:00 - 3:00	AI & Computer Vision for Nat Hazards
3:00 - 4:00	Enhancing Data with AI
4:00 - 4:15	Break
4:15 - 5:00	Data Gathering For Regional Simulation
5:00	Training adjourns for the day

**Friday, July 26, 2019 - SimCenter Workflows**

<b>Time</b>	<b>Topic</b>
9:00 - 9:15	SimCenter Overview
9:15 - 9:45	SimCenter Research Tools for Single Buildings
9:45 - 10:30	SimCenter Regional Workflows
10:30-11:30	Exercise – Regional Workflow on VM
11:30 - 11:45	Break
11:45 - 12:30	DesignSafe-ci & Agave
12:30 - 1:30	Agave Exercises
1:30 - 2:30	Lunch
2:30 – 3.30	Exercise – Regional Workflow on DesignSafe
3:30 - 4:30	Evaluation, Feedback & Direction
4:30	Training adjourns