

POSSE - Extended Team Instructor Support Grant

OpenFE – Developing Faculty Expertise and Creating Learning Materials for Humanitarian Free and Open Source Software

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Summary. As a member of newly created POSSE GNOME Accessibility team, we are developing a series of FOSSE Humanitarian labs. The labs start from basic level and is designed in a way that can be used in a junior-level software engineering course or higher. I am going to use these modules in a master's level software engineering class. The main topic of the course is about the design and development of software. I will integrate some lectures on introducing the open source and FOSSE. The developed FOSSE labs will be introduced to students to help them learn challenging software engineering problems from open source community. It is intended to use open source the major learning environment. These hands-on modules will educate students on the benefits and rewards of working on open source in general and humanitarian software projects in particular.

Target Course and Audience. ITCS-6112 – Software System Design and Implementation– 40+ students

This course is run in both Fall 2014 and Spring 2015 semesters. Students in this course are mainly graduate students coming to this program with very diverse software background. Therefore, the labs have to start from the beginning level all the way up to more advanced ones. It is assumed that not all of the students are very familiar with software design or development practices. Collaborative learning during the class time and on the team project is a part of this class. The course also includes a final open-ended group project and it is expected that some teams do their final projects in the direction of FOSSE.

Learning Activities. Here are the first six labs:

1. VM Set up
2. Getting Connected with the HFOSS Community
3. Building a Cloned Module
4. GIT 101
5. Writing a Good Bug Report
6. Making Changes to the code in a development branch/testing a patch

The first labs set up the student environment, introduce HFOSS, and serve as a foundation for the next labs. The next set of labs are intended to focus on finding, reporting and fixing different issues with the open source projects as well as using GIT .

Expected Learning Outcomes. Specific learning outcomes will be developed for each lab. Overall, students are expected to be able to:

- Join and become an active participant in future HFOSS projects
- Set up a working HFOSS development environment
- Apply open source tools to different open-ended projects

Development Schedule: The POSSE GNOME Accessibility team meets every two weeks. Each member of the development team including Alex Mezei, Mohsen Doroodchi, and Suzanne Mello-Stark each creates a lab. At the end of each two-week period, we trade labs to be tested for multiple platforms, for a student audience and to add improvements. Each lab will include learning outcomes, student and faculty instructions as well as a grading rubric. Stoney Jackson, Heidi Ellis and Joanmarie Diggs are supporting our efforts. We will share all labs developed with the POSSE team.

Implementation. In the Fall 2014 and Spring 2015 terms, I will create and institute pre/post student content knowledge surveys to all 40+ students. The surveys will be divided up by easy questions (30%), medium questions (30%) and hard questions (40%). I will also collect sample assignment data from each new lab.

Requested Summer Support funding for lab development: \$2000

Requested Travel Funds for two trips. \$2500

1. SIGCSE 2015 Workshop. March 4-7 2015 Kansas City, MO \$1300

Flight: \$700 Hotel \$600 Meals \$100

2. ICER Conference Paper. August 9-15 Omaha, Nebraska \$1200

Flight: \$600 Hotel: \$600 Meals: \$100

Requested Implementation funding for Fall 2014: \$1500

Requested Implementation funding for Spring 2015: \$1500