EPICS Training Classes at SLAC

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EPICS Collaboration Meeting Spring 2012

2012 Class Schedule

	Date	Start Time	Location	Description	Lecturer		
Day 1	Apr 23, 2012	0930-1030	Kavli Auditorium, Bldg. 51	Introduction to EPICS	Matt Boyes (SLAC)	Materials	
Day 1	Apr 23, 2012	1100-1230	Kavli Auditorium, Bldg. 51	EPICS Process Database	Stephanie Allison (SLAC)	Materials	
Day 1	Apr 23, 2012	1330-1430	Kavli Auditorium, Bldg. 51	EPICS Sequencer	Kuhkee Kim (SLAC)	Materials	
Day 1	Apr 23, 2012	1500-1630	Kavli Auditorium, Bldg. 51	How to write EPICS Device/Driver Support	Till Straumann (SLAC)	Materials	
Day 1	Apr 23, 2012	1630-1700	Kavli Auditorium, Bldg. 51	How to write an EPICS channel access client	Till Straumann (SLAC)	Materials	

2011 Class Schedule

	Date	Start Time	Location	Description	Lecturer	Sponsored By		
Day 1	December 6, 2011	0900-1600	Bldg. 34 Conference Room	Overview of Asyn	Mark Rivers (ANL)	Controls Software	Attendees and Materials	About the Instructor
Day 2	December 7, 2011	0900-1600	Bldg. 34 Conference Room	areaDetector	Mark Rivers (ANL)	Controls Software	Attendees and Materials	
Day 3	December 8, 2011	0900-1600	Bldg. 34 Conference Room	Asyn Drivers, Camera APIs	Mark Rivers (ANL)	Controls Software	Attendees and Materials	

December 6-8, 2011 Class Flyer

2010 Class Schedule

	Date	Start Time	Location	Description	Lecturer	Sponsored By	
Day 1	August 26, 2010	0900-1700	Bldg. 34 Conference Room	Overview of Asyn	Mark Rivers (ANL)	Controls Software	About the Instructor
Day 2	August 27, 2010	0900-1700	Bldg. 34 Conference Room	Asyn Drivers	Mark Rivers (ANL)	Controls Software	

June 22-25, 2010 Class Flyer

Day 1	June 22, 2010	0900-1700	Bldg. 48 Madrone Conference Room	Introduction to EPICS and EPICS Database Principles	Steve Lewis	Controls Software	Attendees
Day 2	June 23, 2010	0900-1700	Bldg. 48 Madrone Conference Room	EPICS Database Practice and State Notation Language /Sequencer (SNL)	Steve Lewis	Controls Software	Attendees
Day 3	June 24, 2010	0900-1700	Bldg. 34 Conference Room	RTEMS Programming and RTOS Concepts	Eric Norum	Controls Software	Attendees
Day 4	June 25, 2010	0900-1700	Bldg. 34 Conference Room	EPICS Device Support	Stephanie Allison	Controls Software	Attendees
	Jan 11 & 12, 2010	8:00am-12:00pm	Kavli 3rd Floor Conf Rm	EPICS Lecture	Steve Lewis	PPA Controls	Materials
		1:00am-5:00pm	Kavli 3rd Floor Conf Rm	EPICS Hands-on Lab	Controls Group	PPA Controls	

2009 Class Schedule

Date	Start Time	Location	Description	Lecturer	Sponsored By	Signup

Dec 7 & 8, 2009	8:00am-12:00pm	ROB Conference Room C	EPICS Lecture	Steve Lewis	PPA Controls	Materials
	1:00am-5:00pm	ROB Conference Room C	EPICS Hands-on Lab	Controls Group	PPA Controls	
Sept 1, 2009	09:00am-12:00pm	B050, Rm 111 (SCCS)	EPICS Overview Lecture 2	Matt Boyes	AE Controls	Attendees
Aug 25, 2009	10:00am-12:00pm	B34 Conference Room	EPICS Overview Lecture 1	Matt Boyes	AE Controls	Attendees

2008 Class Schedule						
October 3, 2008	10am-2:00pm	B050, Rm 111 (SCCS)	EDM Lecture & Hand-on Lab	Matt Boyes	Operations	Attendees
April 28, 2008	8:00am-12:30pm	B15 Conference Rooom	EPICS Lecture	Steve Lewis	PCD	Attendees
May 1, 2008	8:00am-12:30pm	B15 Conference Room	EPICS Hands-on Lab	Stephen Schuh	PCD	Attendees

EPICS Training Class Study Materials

- RTEMS
- EPICS Application Developer's Guide
- EPICS Record Reference
- EPICS Sequencer:
  - http://epics.web.psi.ch/software/sequencer/
  - http://epics.web.psi.ch/software/sequencer/download/seq-2.0.12-MRKnotes.txt
  - [http://epics.web.psi.ch/software/sequencer/download/manual/Manual.pdf
- EPICS Channel Access
- Extensible Display Manager (EDM)

EPICS Training Class Lab Materials

- IOC Development Quick Reference
- EPICS Lab Part1: Create an IOC
- EPICS Lab Part2: Channel Access Clients
- EPICS Lab Part3: Database Intro
- EPICS Lab Part4: SNL Exercise
- EPICS Lab Part5: Water Heater (optional)
- EPICS Lab Part6: EDM (optiona)
- Example IOCs

EPICS Reference Materials

SLAC EPICS Classes

- EPICS Training Course - January 7 & 8, 2010
- EPICS Training Course - December 7 & 8, 2009
- EPICS and the LCLS Control System - August 25 & September 1, 2009
- EDM Overview Class - October 3, 2008
- EPICS Training Courses - April 28 & May 1, 2008

EPICS Extensions

- EDM (html)(pdf)|Author's Web Site

EPICS Base References

- SNS 2006 EPICS Training
- EPICS Record Reference Manual (html) (genSub)
- EPICS Input/Output Controller Applications Developer's Guilde
- State Notation Language and Sequencer User's Guild

Unix References

- How-to Learn Unix in 10 minutes
- Basic Unix Commands
- Unix Command Summary
- Xemacs Editor
- How-to use the vi Editor
- Basic vi Commands
- 10 Second Guide to Bash Shell Scripting
- LCLS PLC Development Environment
- more...

RTEMS References

- How-to Setup the RTEMS Debugger

LCLS EPICS Development Environment Setup on Linux

Login to lcls-dev2 with

```
$ ssh -X -Y username@lcls-dev2.slac.stanford.edu
```

Find out what shell you are running by typing `echo $SHELL`. Your shell will be either `tcsh` or `bash`.
ex:

```
$ echo $SHELL
/bin/bash
```

I am running `bash`.

If you are using `tcsh`, type this command to enter the bash shell before proceeding:

```
$ bash
```

If you are using `bash`, type this command:

```
$ source /afs/slac/g/lcls/tools/script/ENVS.bash
```

As an alternative you can skip the above step and instead copy the following file to your home directory. This file includes the command to source the setup script listed in the above. The advantage is that this script is executed automatically when you type bash.

```
$ cp /afs/slac/g/lcls/tools/script/.bashrc .
```

For questions, please contact Jingchen Zhou or Ken Brobeck of the AE Controls Software Engineering Department.

```

```

Lab Requirements

Lab attendees need to have:
_(For classes in SCCS B50, a limited number of computers and mice will be provided) _

1. A laptop with wireless access to the SLAC visitors network, or pair up with someone who will attending and can bring a laptop.
2. You will need to log onto lcls-dev2 via VPN or by sshing to flora first and then onto lcls-dev2.
3. A mouse with 3 buttons
4. a Unix account with the LCLS EPICS Development Environment setup (see above section)

Software Required on Windows Laptop

1. SecureCRT or putty
2. X-Win32

Software Required on OSX Laptops

1. X11