

# Bootlin training course evaluation

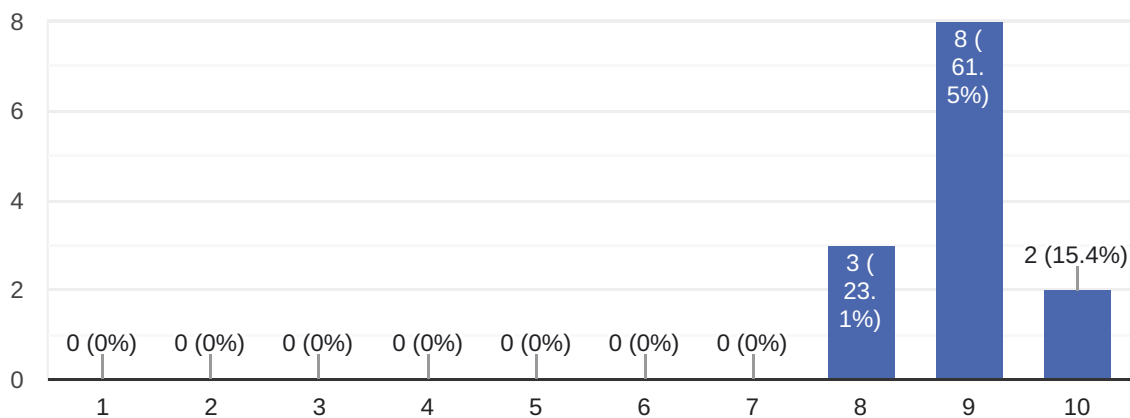
13 responses

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## Overall rating of the course

 Copy

13 responses



### Comments and suggestions

7 responses

Material is great and as well trainer.

Interesting and educational. I have learnt many things. Really good trainer that seemed passionate and interested in the way he talked. The only drawback was that the course material went by very fast. Some parts was harder to understand and the pace was too high.

It might be more efficient to cover a part/chapter, do the demo and then wait until the next training session before starting on new material - giving the participants the opportunity to cover the lab in conjunction to the lecture and demo.

Very fascinating! It was a nice surprise to see that I had in fact acquired much of the knowledge presented in the course already (due to the fact that I've once had to come up with a patch for a Ethernet PHY driver by myself without any previous experience with Linux kernel internals), and still the course was useful in providing more background and understanding. Although I was initially disappointed in that the course would not really touch other topics in the Linux kernel outside driver development, by the end of the course it became apparent that you can't cover everything in a single course, because it's already packed full of information as it is.

Fantastic course overall

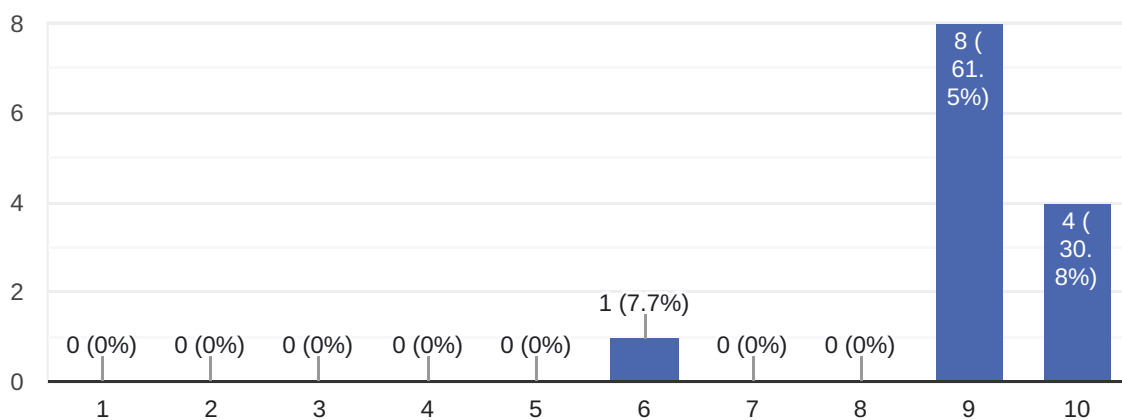
Very informative and useful course.

Time to do excercises in course time.

### How useful were the lectures?



13 responses



### Comments and suggestions

3 responses

Slow down the pace. The content is very interesting and sometimes it is beneficial to take notes, but when one does, two subsequent slides are missed, due to the high pace.

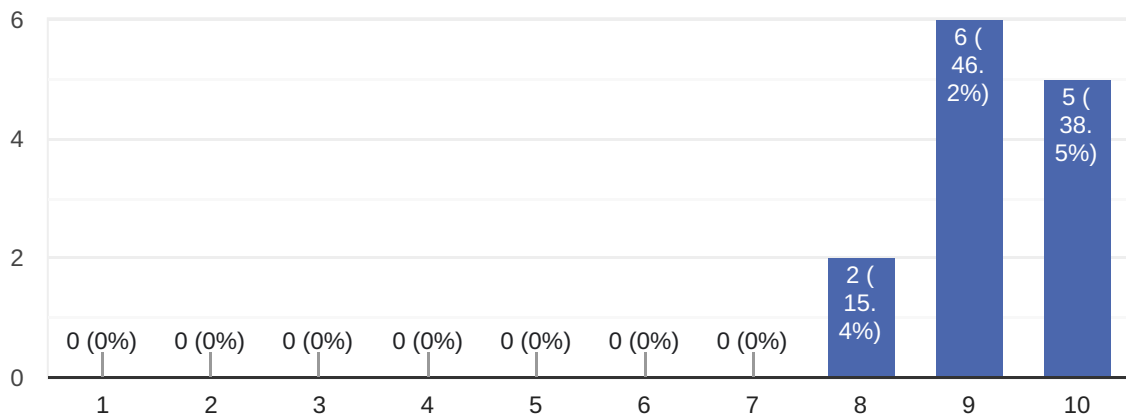
Personally I'd do well even if I'd had the same time dedicated only for a self-study with the same high-quality materials available, but I recognize that not everybody learns the same way and judging by the questions presented during the lectures many in fact do benefit from having the lecturer there for help. Also it's always fun to see other people (the trainer) find their way around the source code and hack stuff away live.

Lectures were really good and the pacing of the material was really well done.

### How useful were the practical demos?



13 responses



## Comments and suggestions

5 responses

I wonder if the videos of the exercises would be good. Can look at it afterwards...

Since not all details are in the lab instructions, the same comment is applicable on the demos. Give the participants more time to think and take notes. Not do the labs/demos but note the comments and explanations. The nunchuk driver escalated quickly.

Cross-compiling the kernel was stupidly easy compared to what I'm used to with embedded software in general so we were off to a good start from the beginning! The instructor had a quick pace doing the demos that I had a hard time keeping up even though I might have used some of the coffee breaks to solve some problems and was constantly peeking the next steps. But, I think it was expected that people do the demos on their own time, so in that regard I guess I must have succeeded phenomenally.

I'd emphasize well beforehand the amount of USB-A ports required to be able to connect all of the hardware to the PC. It's not uncommon nowadays to have laptops with mainly USB-C ports, so a USB hub might be needed.

It would have also been good if it was stated that not having a microSD card *\*is\** okay, because I didn't have one at hand but was eventually still able to carry out all of the demos - I just had to copy-paste the bootargs and bootcmd to U-Boot on every reboot, but even that was not required too often to be of nuisance. The same applies for the initial networking via USB, as I quickly ended up just using the Ethernet port of the BeagleBone Black instead. I also managed to do fine with having Ubuntu guest OS only in a virtual machine on a Windows host.

The demos were extremely useful, also having the Wednesdays off for the demos was an excellent decision and allowed to catch up on the demos.

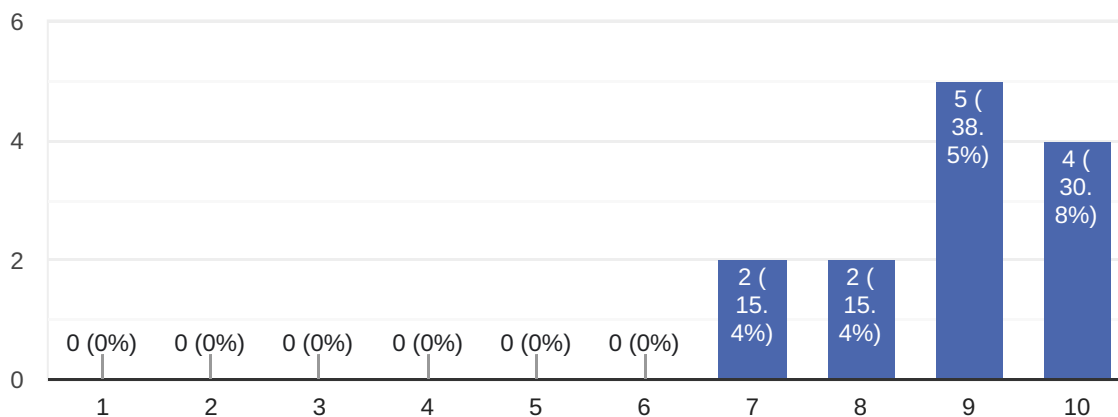
The text material to replicate some of the practical demos, especially some of the ones requiring writing a device tree file, did not have enough information to independently write the necessary source files, if one doesn't remember every detail from the lecture itself (which is practically impossible). The lecture slides didn't contain this information either. The only way to get the demos to work was to copy the files (at least the device tree files) from the solutions directory. However, just copying entire readymade files wholesale is not very conducive to learning how to write such files. It would have been nicer and more useful if the lab material had some kind of tutorial in textual form on how to write the complete files (the meaning of each name/keyword/element, if it hasn't been explained before, and how/where one would find the necessary information to be able to write it). Optimally one would be capable of writing the entire working source/device tree file from the tutorial.



### How would you rate the overall organization of the course?



13 responses



### Comments and suggestions

6 responses

There was some voice problems with google meeting. Onsite course is always better.

10 minutes breaks felt a little bit to short. Could have a longer break once a day maybe.

with this type of course organization, time is needed to book for doing labs on spare time (if going to do labs)

Great, thank you!

Even though the course dates were known well in advance, I think I saw the timetable for the first time only on the week before the course (when I was on a vacation, no less) in an email that was supposed to be a reminder.

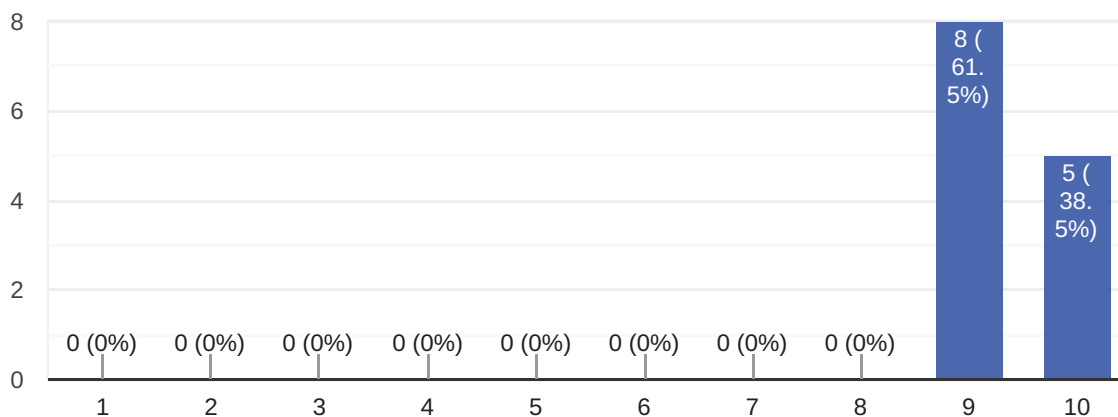
Everything was easy to do, all information was readily available.



### How would you rate the trainer?



13 responses



### Comments and suggestions

4 responses

Really good. Miquel was excellent.

Knowledgeable, encouraging

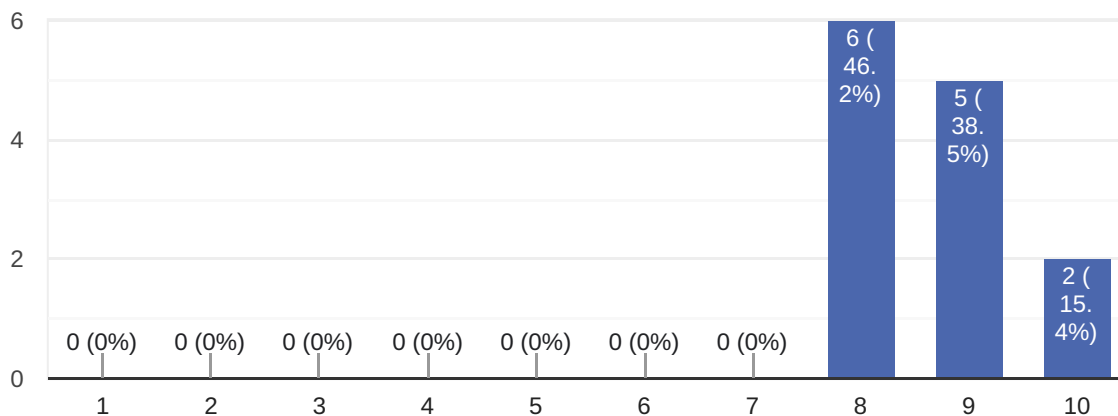
Very skilled professional and honest about the things he doesn't know. I believe people less familiar with the more advanced topics benefited from having him, and it may as well be that me believing to have already understood something was due to the trainer being just exceptional :)

Really good educator.

### How did the course meet your learning objectives?



13 responses



## Comments and suggestions

5 responses

It is hard to teach all that is needed but this is a great starting point.

Of course there's much more to learn, but the course was a good introduction to get your feet wet with the Linux kernel and drivers

Learned a lot and gained plenty of new information and also revised things that I already knew.

Example drivers gave me a good understanding how to tackle Linux drivers.

It was a good introduction to and overview of device drivers and device trees, but especially the latter remain mostly obscure to me (the syntax is much clearer, but how to come up with the contents is still an almost complete mystery). As device trees are absolutely essential for writing certain types of device drivers for ARM processors, the course could perhaps have concentrated a bit more on them.

## What part(s) of the course did you like most?

8 responses

Labs

Device tree

The opportunity for participation and interaction from the students.

All demos and also the knowledge between the lines (information that was not in the presentation). How mechanisms work, the order of execution - intrinsic details.

Not having all the exercises be just filling the blanks but actually creating a driver from scratch by starting from an empty file is as it should be done.

The demos were educational and fun to do.

Setting up dev environment for BBB and nunchuk driver creation

Learning and getting a good picture on how to write and run a Linux kernel module (and what restrictions and requirements are necessary to do so). The practical labs made it even more tangible.



### What part(s) of the course did you like least?

5 responses

The overwhelming amount of information can be a bit difficult to process.

I don't know if the "How to contribute to the community" is so topical at this stage.  
The memory "chapter" with virtualization and mappings was a bit confusing. Fast pace in combination with the new information made it hard to follow.

The debugging techniques section felt a bit brief or hurried.

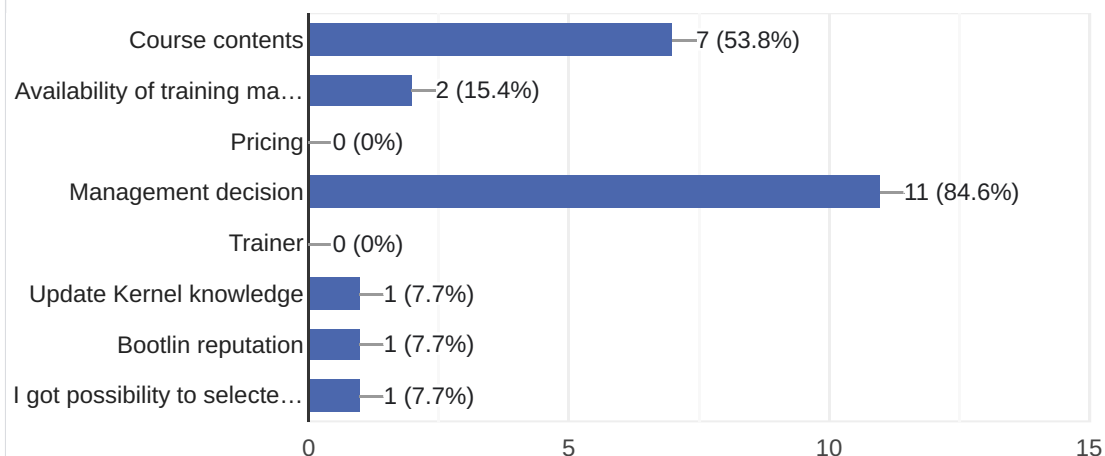
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Device trees were not explained enough (and what was explained was often quite rushed).

### What reasons prompted you to choose a Bootlin course?



13 responses



### Comments

4 responses

Thanks

Great course, very happy to have had the opportunity to participate.

It was a nice surprise as well to have the Linux development and contribution process covered, as well as tips for where to start porting the kernel for your own board. I would have enjoyed if the DMA and mmap sections were covered, too, but at least it's all there in the slides.

Thank you for this course!





### Further training needs?

2 responses

I am interested in participating Embedded Linux training course too, still.

Kernel internals in depth

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