



# **IA based Embedded Curriculum Sharing**

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# IA based Embedded Curriculum Summary

This course introduces concepts of embedded system and its features. Students can understand how Linux works in an embedded system, how to customize and tailoring the kernel, how to port and develop the device drivers through this course.

Course Name: Embedded Linux System

Course Type: both PPT & Hands-on practice

Target Student/Semester: 120

Student Number (per year): 120

Course Duration: Sep 2012 ~ Feb 2013

Prerequisite Courses: C Programming Language, Operating System

# IA based Embedded Curriculum Characteristic

Curriculum/Course Characteristic:

- 1) Introducing basic concepts helps students know what is an embedded system.
- 2) Showing the components of an embedded system helps students understand how an embedded system works.
- 3) Doing practical simple programming helps students get the experience of developing a device driver in an embedded system.

# IA based Embedded Curriculum Key Points

Curriculum/Course Key Points:

- 1) Basic concepts
- 2) Developing tools, methods and procedures
- 3) Practices

# IA based Embedded Curriculum Difficult Points

Curriculum/Course Difficult Points:

- 1) Diverse data structures of the device model
- 2) Emulations of device
- 3) Debug

# IA based Embedded Curriculum Experience Sharing

The Embedded Linux System is a course which needs both theory and practice. During the course, the classroom teaching, media presentations, experiments are adopted. Students are grouped according to the experiment contents and their interests.

For course, we have to utilize the newest and popular technologies, say Android, to help students easily combine the embedded system with their daily life. In this way, students will not fill empty of the course.

# IA based Embedded Curriculum Hands-on Practice Case Sharing (1)

Please use the following pages to share at least 2-3 the most effective hands-on practice cases of your IA based embedded curriculum. Each case should include the following items:

**Case Name:** char/block device drivers development

**Case Attribution:** device driver, which role does the driver play in an embedded system

**Case Objective:** understand the char/block device, and the procedure to build a kernel module, and a device driver

**Case Content:** Linux Device Driver 3rd Edition

# IA based Embedded Curriculum Hands-on Practice Case Sharing (2)

Please use the following pages to share at least 2-3 the most effective hands-on practice cases of your IA based embedded curriculum. Each case should include the following items:

**Case Name:** Network Storage Teaching Case Based on Atom Platform

**Case Attribution:** x86 for embedded system, customize kernel, build up the environment, debug

**Case Objective:** learn how to choose tools and then build up a embedded system

**Case Content:**



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# IA based Embedded Curriculum Hands-on Practice Case Sharing (3)

Please use the following pages to share at least 2-3 the most effective hands-on practice cases of your IA based embedded curriculum. Each case should include the following items:

**Case Name:** Port Linux to microblaze

**Case Attribution:** porting a system

**Case Objective:** understand how to port Linux to an architecture

**Case Content:**



Microsoft Office  
Word 97 - 2003 文档

# IA based Embedded Curriculum Resource

- Linux system, *Nicholas Mc Guire*
- Linux Device Driver 3<sup>rd</sup> Edition, *Jonathan Corbet, Alessandro Rubini, and Greg Kroah-Hartman*

Thank You!