



2012

**Intel China Embedded Curriculum Online Training
Peking University Sharing**

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IA based Embedded Curriculum Summary

(Note: Please list the basic information of your embedded Curriculum on this page. If you have more than one course, please list each course information on a separate page and specify their relationship. Following items for your reference.)

Course Name: **Embedded Software Development Technology**

Course Type: **both PPT & Hands-on**

Target Student/Semester: **senior students and graduate students**

Student Number (per year): **80**

Course Duration: **18 Weeks, 48 Hours**

Prerequisite Courses: **C Programming**

IA based Embedded Curriculum Characteristic

Curriculum/Course Characteristic:

- 1) This course is aimed to help the students to **understand main methods, tools, and techniques** of embedded software development.
- 2) Through a series of programming assignments, the students will **gain necessary skills and experience** to work on embedded software development projects.
- 3) The course was **based on Atom and Linux**.

IA based Embedded Curriculum Key Points

Curriculum/Course Key Points:

- 1) Gain an **overview of embedded systems applications and design methods**
- 2) Obtain **practical knowledge** by learning how to develop and write code for Embedded Linux Applications
- 3) Learn how to **plan and execute** complete embedded systems Applications

IA based Embedded Curriculum Difficult Points

Curriculum/Course Difficult Points:

- 1) How to improve students' interest in course project
- 2) How to improve students' practical ability
- 3) How to improve students' innovation ability

IA based Embedded Curriculum Experience Sharing

Course Experiments:

- ❑ **Experiment Hours: 16 learning hours**
- ❑ **Experiment Platform: Atom platform**
- ❑ **Experiment Content: Embedded software development based on Atom platform.**

Evaluation:

- ❑ **Assignments and Experiments: 30%**
- ❑ **Final Examination: 40%**
- ❑ **Course Projects: 30%**

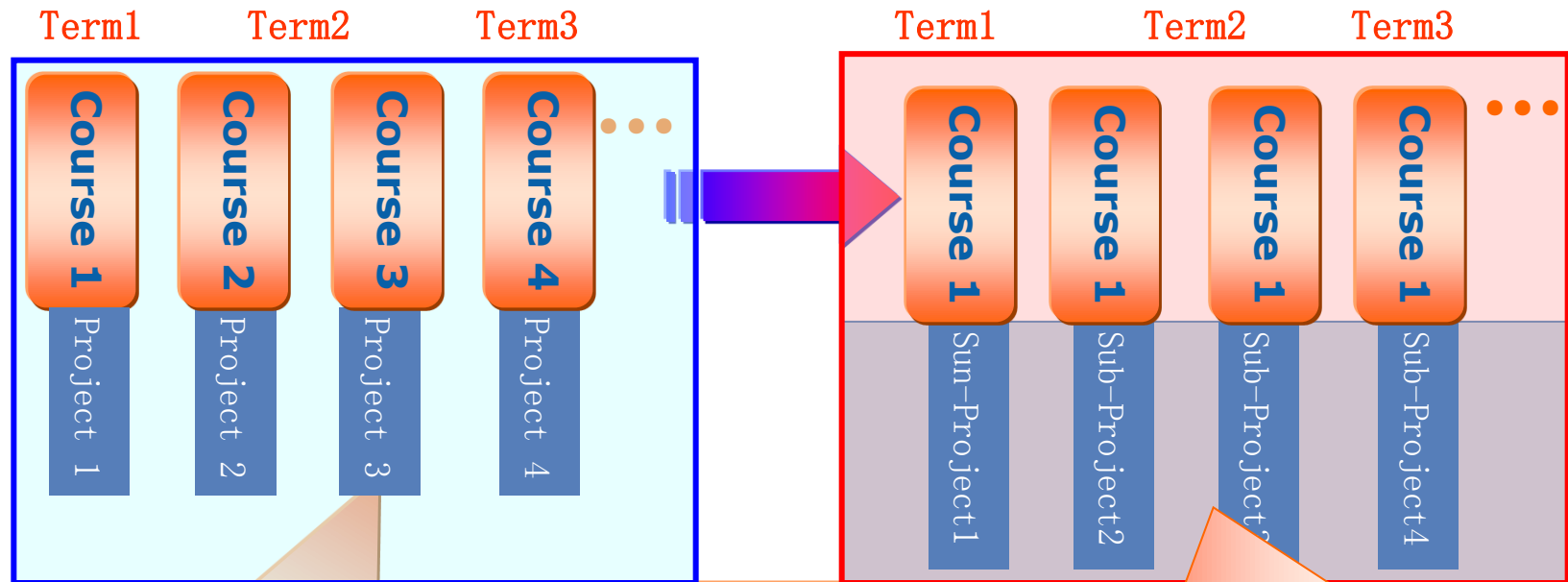
IA based Embedded Curriculum Experience Sharing

Course1: Introduction to Embedded System

Course3: Embedded OS

Course2: Embedded Application Software Development

Course4: Embedded System Design



Project driven:
(One course, one project)
The effect is limited and the outcome is easy to lose.

Teaching-Organization:
Courses are taught by full-time professors as well as industry experts; pay attention to **piratical training**

Integrated Practice:
Each course has a sub-project and **the connections between courses are highlighted.**

➔ One project drives multiple courses

IA based Embedded Curriculum Experience Sharing

Comprehensive Practice

- ❑ Each group with **four students** to complete a practical projects.
- ❑ Students **learn by doing** to understand the content of lessons more deeply; Stimulate students' interest and self-motivation to learn.
- ❑ Each group is required to **submit a complete report of the project** at the end of the course.
- ❑ Improve the ability of **self-learning** and to **solve practical problems**, and **develop teamwork skills**.



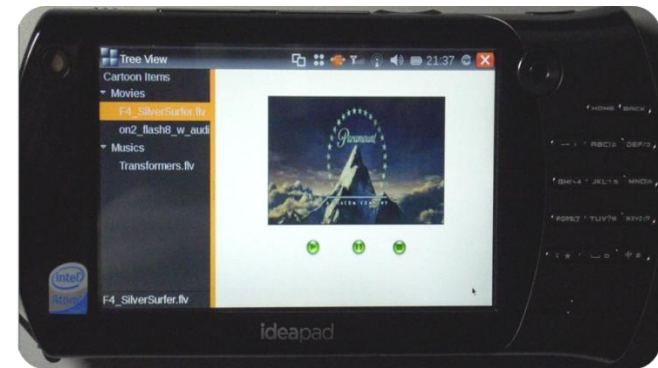
D-Menu



Internet TV



Drawing Anywhere



Streaming On Demand



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: A Simple Ftp Server

Case Attribution: Course Project

Case Objective: Cultivate students' ability to analyze and solve problems by using learned knowledge synthetically

Case Content: Code

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: Smart Services @Home

Case Attribution: Comprehensive Practice

Case Objective: Gain an overview of embedded systems applications and design methods

Case Content: The documentation and code

Comprehensive Practice Case: Smart Services @Home

- **Context-aware systems provides smart services to the users according to the change of the environment.**
- **Through the mobile terminals and sensors, service system can perceive (aware) people's surrounding environment (context) and provides necessary services automatically.**
- **Context: Person, time, location, computing environment.**
- **Context aware services' research focus on how to obtain, represent and reason context.**



IA based Embedded Curriculum Resource

Please list your IA based Embedded Curriculum resource on this page. For example, textbook, website URL, etc.

Course Website URL: <http://opensource.ss.pku.edu.cn/embedded>

Thank You!