On the Path to Global Leading Higher Education

Software-Oriented University Project and IT-Assisted Teaching Environment

4th ASEAN+3 Rectors’ Conference
July 26, 2018

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Vice President for International Affairs
Chung-Ang University
Background

Industry 4.0

Education 3.0

Traditional Learning
- Told what we need to know
- Memorize it
- Problem assigned to illustrate how to use it

Problem Based Learning (PBL)
- Problem assigned
- Identify what we need to know
- Learn and apply it to solve the problem

<table>
<thead>
<tr>
<th>TRADITIONAL</th>
<th>FLIPPED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Lecture</td>
</tr>
<tr>
<td>Homework activities</td>
<td>Classroom activities</td>
</tr>
</tbody>
</table>
Software-Oriented University Project
## Software-Oriented University Project

<table>
<thead>
<tr>
<th>Program Overview</th>
<th>Management</th>
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</thead>
<tbody>
<tr>
<td><strong>Goal</strong></td>
<td>Chung-Ang University 3</td>
</tr>
<tr>
<td></td>
<td>To Establish SW Convergence Talent Development System Leading the 4th Industrial Revolution, and To Strengthen Professional Education with Field-Oriented Problem-Solving Ability</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td><strong>Management</strong></td>
</tr>
<tr>
<td></td>
<td>Chung-Ang University 3</td>
</tr>
<tr>
<td>❖ Establishing Infrastructure for Research and Practice Environment</td>
<td><strong>Management</strong></td>
</tr>
<tr>
<td>❖ Operating University-Industry Cooperation Projects and Internship Programs</td>
<td><strong>Management</strong></td>
</tr>
<tr>
<td>❖ Developing or Reorganizing Curriculum Reflecting Industrial Demands</td>
<td><strong>Management</strong></td>
</tr>
<tr>
<td>❖ Recruiting and Selecting Excellent Talents</td>
<td><strong>Management</strong></td>
</tr>
<tr>
<td>❖ Recruiting More Faculties in SW Education</td>
<td><strong>Management</strong></td>
</tr>
<tr>
<td><strong>Period</strong></td>
<td>4 Years (+2 Years depending upon evaluation)</td>
</tr>
<tr>
<td><strong>Budget</strong></td>
<td>1 million USD per university for 1st Year; 2 million USD per university for 2nd – 4th Years</td>
</tr>
</tbody>
</table>

**Software-Oriented University Project**
Software-Oriented University Project

Participating Universities

As of 2018
Software-Oriented University Project

Developing SW curriculum together with universities and industries

- Establish university-industry joint curriculum innovation committee
  Based on global standard and the latest demand of the industry.

- Build an environment similar to actual industrial sites and Conduct class in universities using same tools in industries

- Utilize open source SW in education and Requires participating developer community
The Case of Chung-Ang University’s School of Software

Four Tracks
By SW Occupation Group
- Artificial Intelligence
- Smart IoT
- Enterprise Software
- Digital Imaging

Coding Boot Camp
Immersive Coding Training

SW English
SW Introduction in English,
Communication in English,
SW Presentation & Technical Writing, etc.

University-Industry Cooperative Courses
Open Source SW Project / Industry Hands-On Project / Capstone Design
Industry Internship
Software-Oriented University Project

Reorganization of the Curriculum
Reflecting the Demands of the Industries

1. Problem-solving Type University-Industry Cooperation Project

2. Long-term Internship

3. Employment

- Presenting problems on the spot by company → Defining relevant competencies for solving problem by university and company → Opening relevant course in university
- After project is finished, students will be able to acquire practical experience through long-term (more than 6 months) internship programs.
- After graduation, students have better chance to be employed.

- Recruiting faculties with rich practical experiences in industries
  - Industry-Academy Collaborative Professor Track, Adjunct professors
Software-Oriented University Project

Expansion of SW talent training program to lead the global market

16 week program

K-SW Square

- Strengthening practical English education
  - Communication and technical writing skills needed in global collaboration process
- Networking with overseas companies and universities for global start-ups and employment

Capstone Design
- Team Project
- Prototype Development

Major Courses
- Computer Info & Tech
- System Architecture
- Database, etc.

Mentoring + English Education
- Industry Mentors
- Tech Coaching
- ESL
Software-Oriented University Project

Open to all majors to participate basic SW education

Basic SW Course to All Majors

- On-line & Off-line AP courses before entering college
- Mandatory basic SW courses to freshmen in all majors reflecting the characteristics of majors
- Programming practice to experience how to solve problems in each major by using SW
  - Programming, Data Structure, Algorithm

SW Convergence Majors to Non-SW Majors

- Combine the knowledge of other major and SW competency to create synergy
  - Joint Major / Double Major
  - CAU Case: SW-Humanities; Cyber Security; Tech-Music; Tech-Art
Recruiting Talented Students in SW Field

- Establish separate admission criteria for talents in SW field.

Modifying Evaluation Criteria for Faculty

- Include the contribution to SW education in addition to existing criteria of research performance.

SW Education and Experience Program to Discover Future SW Talent

- Connect to nearby SW-leading primary and secondary schools through SW Youth Camp.
- Special lectures to general public and Open online SW courses.
IT Assisted Teaching Environment: The Case of Chung-Ang University
IT Assisted Teaching Environment: The Case of CAU

Generic softwares for teaching in all majors

- Presentation
  - PowerPoint
  - Prezi

- Basic Data Management
  - Excel
  - Access

- Survey
  - SurveyMonkey
IT Assisted Teaching Environment: The Case of CAU

Major-specific softwares

Statistical Analysis
- SPSS
- R
- SAS
- STATA
- Minitab® 18

Programming
- C++
- Java
- Python

Graphics
- Adobe Photoshop
- ArcGIS

Network Analysis
- CYRAM NetMiner 4

Chung-Ang University
IT Assisted Teaching Environment: The Case of CAU

Contents Management System

E-Learning Tool

- Xinics Commons
- Silverstream
- ReadyStream
- Canvas
- Blackboard
IT Assisted Teaching Environment: The Case of CAU

Xinics Commons EX

- Create
- Manage
- Publish
IT Assisted Teaching Environment: The Case of CAU

Xinics Commons EX

E-Learning Tool

Video Upload

Various video files including MP4, WMV, AVI, MOV, M4V, MPG, MPEG, FLV, ASF and other video files can be uploaded. Please choose a video file to add.
* Added video file is converted into MP4 format.

Upload Document

PDF, PPT, PPTX, DOC, DOCX, XLS, XLSX, HWP, TXT, ZIP types of files could be uploaded. Please choose a file to upload.
* PDF files are converted to watch in webpage.

Authoring Contents

YouTube, SlideShare, TED, Vimeo

Please put the address of social media.

Add

Xinics Authoring tool: ReadyStream (SilverStream) made content file could be uploaded. Please select a content file to add.
IT Assisted Teaching Environment: The Case of CAU

Xinics Commons EX

E-Learning Tool

AppSquare

ReadyStream Producer
- Live recording content authoring tool
- Lecture video/audio along with various materials like PPT are recorded to create contents.

Supported Platforms: Windows (PC)

Launch ReadyStream Producer with left menu [Create Contents] after installation

E-Learning content authoring tool based on MP4/HTML5

Various Recording type supports
Apply Chroma-Key Effect
Trim contents
Apply Background / Layout

SilverStream Producer
- Live recording content authoring tool
- Learner video/audio along with various materials like PPT are recorded to create contents.

Supported Platforms: Windows (PC)

Launch SilverStream Producer with left menu [Create Contents] after installation

Create contents with various Recording type supports
Various Recording type supports
Apply Chroma-Key Effects
Contents trimming
Adjust Background / Layouts

Slide Presentation
- Record video/audio with presentation materials

Whiteboard Presentation
- Record video/audio with whiteboard tool

Screen Presentation
- Record audio along with your PC screen

Video Presentation
- Record video of lecturer
IT Assisted Teaching Environment: The Case of CAU

Xinics Commons EX

E-Learning Tool

USA TODAY Snapshot

Consumers say they look for great food and reasonable prices when choosing a restaurant.

What restaurant diners want

Reasonable prices 22%
Great food 56%

By Anne R. Carey and Chad Palmer, USA TODAY
Source: Caravan Survey for SHP
IT Assisted Teaching Environment: The Case of CAU

E-Learning Tool

COOC

Introduction
Chung Ang University MOOC Service Information

List of courses

Notice and Guidance

Introduce
MOOC Service Information

중앙대학교 MOOC 서비스 COOC을 소개합니다!

Experience COOC’s innovative learning platform that makes it easy for anyone, both young and old, to organize and manage their lectures!

COOC is an interactive course design solution with active interaction between instructors and learners, and a learning platform that helps learners to work effectively!
### IT Assisted Teaching Environment: The Case of CAU

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Year</th>
<th>University</th>
<th>Course Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>Year 2018 Project</td>
<td>2018-07-06</td>
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<td>Academic Affairs, Teaching and Learn...</td>
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<td>Da Vinci Creative Talent Academy</td>
<td>2018-06-15</td>
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<tr>
<td>CAU-MOOC 1st semester of 2018</td>
<td>2018-03-02</td>
<td>University</td>
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<tr>
<td>CAU-MOOC 2018 First Semester</td>
<td>2018-03-02</td>
<td>University</td>
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<td>(all)</td>
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<tr>
<td>CAU-MOOC 1st Semester 201</td>
<td>2018-03-02</td>
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<td></td>
<td>(all)</td>
</tr>
<tr>
<td>Accounting Principles - Accounting Principles</td>
<td>2018-01-02</td>
<td>College of Business Administration</td>
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<td>(all)</td>
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<tr>
<td>Computing Incidents and Problems</td>
<td>2017-12-01</td>
<td>Da Vinci SW Education Center</td>
<td></td>
<td>(SW Ed...)</td>
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<td>Python Basic Grammar and Usage</td>
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<td>Da Vinci SW Education Center, SW Ed...</td>
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<tr>
<td>Software programming to un...</td>
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<td></td>
<td></td>
<td>Da Vinci SW Education Center, SW Ed...</td>
</tr>
<tr>
<td>SW Introduction in English</td>
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<td></td>
<td>Da Vinci SW Education Center, SW Ed...</td>
</tr>
<tr>
<td>Second semester of 2017 CTO</td>
<td></td>
<td>University</td>
<td></td>
<td>(all)</td>
</tr>
</tbody>
</table>
IT Assisted Teaching Environment: The Case of CAU

COOC CAU-MOOC

E-Learning Tool

CAU OPEN ONLINE COURSE

COOC KOCU

CAU-MOOC

ASEAN University Network

Chung-Ang University
Introduction of e-Class at Chungang University

“On-off learning management LMS platform for active learning and flip learning”

The Chung-Ang University e-Class is a new learning platform that is optimized to efficiently convert existing learning activities and teaching methods, and to run active learning and flip learning. On-off integrated platform.

- Interactive learning structure design enables active learning and flip learning
- Integrated learning management by integrating online / offline class activities
- Easy to operate, mobile optimized to learn anytime, anywhere
CAU e-Class

Characteristics of e-Class course design and classroom configuration at Chungang University

Interactive course design using various materials
You can design an interactive learning structure by combining various learning elements such as lecture videos, various media materials, document file quizzes, discussions, and voting.

Class structure for classroom purpose
Depending on the purpose of the class operation, you can configure various class types such as online exclusive class, offline learning link class of flip learning method, team project operation, online test operation.

Structure and Characteristics of e-Class at Chung-Ang University

Online test and evaluation design
In addition to free quizzes, you can design a systematic test that can be completed within a limited period of time such as midterm and final exams, and evaluate the design according to the proportion of various learning factors.

Working offline
On-line classes allow students to instantly participate in polls or quizzes on their mobile devices and use them in on-site classes or in online classrooms.

Teaching / learning activities and active interaction
Online interactive learning activities can be achieved by combining various elements such as online pre-study, class lecture review, and quiz / discussion.

Analysis of learning activities and attendance management
You can collect, analyze, and inquire learners’ activities by individual students or learners, and manage integrated on / off attendance management.

Flexible connectivity / scalability with various systems
Standardized courses can be linked to standard compatible systems such as MOOC and LMS, flexible with other systems in campus, lecture recording system, and optional extension functions can be introduced for teaching activities.
IT Assisted Teaching Environment: The Case of CAU

CAU e-Class

"Integrated management of various activities throughout On / Off class"

1. **Online Pre-study - Watch Lecture + Quiz**
   Teachers for Pre-studying. You can use short-lecture recording tools to create and present short lecture videos, and submit simple quizzes to diagnose.

2. **Preparing offline learning activities**
   The learner participates in the class after preparation for the pre-study, preparing the presentation or discussion for the class.

3. **Participate in classes and quizzes / voting**
   You can participate in quizzes or polls in the classroom through the mobile clincher during the class to allow immediate interaction learning.

4. **Student Discussion / Presentation and Teacher Feedback**
   During the class, you can conduct team-based discussions on topics given on the basis of online pre-study, and you.

5. **Online Discussion / Q & A**
   After class, you can go online for further discussion, question and answer, and supplementary materials.

6. **Review and next lesson**
   You can review the recorded lessons in the classroom, and you will be provided with up-front learning for the next class.
IT Assisted Teaching Environment: The Case of CAU

CAU e-Class

Notice

- Notify at the top of the lecture room

Title

제목을 작성하세요.

Content registration

- Upload video
- Upload a document
- Social Media
- Import from MySpace

Contents

[Content editing options]
IT Assisted Teaching Environment: The Case of CAU

Mobile Application

E-Learning Tool

Course Selection

My classroom

2018년 1학기
과목명을 입력해주세요.

Initialize defaults

First semester of 2018
Statistics and Policy (01) | hongjunhyeon

Course Selection

2018 1st semester statistic...

Notice

Final Exam (Revised)
By: Joon-yun Hong
Posted: 2018-06-11 | Views

Notice

Class Materials for Week 12
By: Joon-yun Hong
Posted: 2018-06-07 | Viewed: 62

Notice

Class Materials for Week 11
By: Joon-yun Hong
Created: 2018-05-22 | Views

Content Preview

Inferential Statistics

drawing and measuring the reliability of conclusions

MAH00461

Basic Information

Added date: 2018-07-17 20:30:00
Modified date: 2018-07-17 20:31:11
Content type: Video
Size: 704.4 MB
Playtime: 34:00
Privacy: Public
View count: 0
Location: Uncategorized
Further Thought: Beyond Problem Solving
Further Thought: Beyond Problem Solving

Type III Error

Beyond Type I & II Errors

- Problem Sensing
- Problem Structuring
- Problem Definition
- Problem Unsolving
- Problem Dissolving
- Problem Solving
- Solution

Right problem?

YES

Problem Solved?

YES

NO

NO
Thank You!