New Approach for Prompting International GNSS Education

Prof. Dr. WENG Jingnong

International School, Beihang University
BeiDou International Exchange and Training Center
UN regional centre (RCSSTEAP) in China
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Nowadays, we can explore the earth from the Sky
In ancient, people explore the earth by standing on the land.
Human beings are born with imagination and curiosity.

An ancient myth “the Thousand-Mile Eye” and “Long Ear” becomes true in the real life.
International Education

at

BeiDou International Exchange and Training Center, 2012

APSCO education and Training Centre in China, 2013

RCSSTEA - UN regional Centre in China, 2014
BeiDou International Exchange and Training Center

Established in August, 2012

This is only center of Beidou system in China sponsored by Beidou Office and its aim is to train International GNSS/BeiDou talents and prompt BeiDou technology and application in the world.
APSCO education and Training Centre in China

established in 2013

This is China Center. Its aim is to facilitate facility and Capacity building for APSCO member states, the education field mainly focus on **RS & GIS, SATCOM, GNSS, Small Satellite and Space Law**, etc.
This centre is affiliated to the United Nations. It is established to contribute to the implementation of “Space Applications Program” promoted by COPUOS, and to improve the facility and capacity building of Space technology and education for the Member States of the Center.
The Governing Board is the principal policy-making organ of the Centre and the director is responsible for the operation of the centre. Till now, the centre has 8 member states.
International GNSS Education

• Master/ Doctoral Degree Program  2013,2014,2015

• Summer School on BeiDou/GNSS Frontier Technology  2012,2013,2014

• Short training Program 2015
United Nations/Russian Federation Workshop on the Applications of GNSSs  May 18-22, 2015  Krasnoyarsk
New Education Approach

• Courseware
• Online Training
• GNSS MOOCs
Courseware

Visualize the GNSS concept, principle, technology, applications and its related by means of IT technology.

C01 BeiDou Constellations/Orbits
C02 GPS Constellations/Orbits
C03 4 GNSSs Constellations
C04 4 GNSS MEO Comparison
C05 GNSS positioning principle
C06 Flying objects in different height
C07 24 Solar terms
C08 Ionosphere and troposphere
C01 BeiDou Constellations/Orbits
C02 GPS Constellations/Orbits
C03 4 GNSS Constellations

C04 4 GNSS MEO Comparison
C05 GNSS positioning principle

C06 Flying objects in different height
Online Training
What is MOOCs?

MOOC – Massive Online Open Course

The dramatic increase in online education, presents researchers, academics, administrators, learners, and policy makers with a range of questions as to the effectiveness of this format of teaching and learning.
Differences with e-learning /Distance learning or SPOCs and OER

e-learning initiated in 1999

- Yale, Columbia, Stanford, Duke—— Sakai (Open Source)
- MIT——Moodle
- Princeton, Pennsylvania, Chicago ——Blackboard
- Web CT system
- Other Self-development systems
Differences with e-learning /Distance learning or SPOCs and OER

**OER** — Open Educational Resources initiated in 2002
- MIT — [OCW](https://ocw.mit.edu/) (Open Course Ware)
- Yale — Open Yale Courses
- Stanford — Stanford Engineering Everywhere (SEE)
- Penn — Penn’s Neuroethics OER
- Harvard — Harvard Open Courses
- China - Excellent Course Plan (start from 2003)
  - Public Video Course (start from 2011)

**SPOCs** — Small Private On-line Courses
Differences with e-learning / Distance learning or SPOCs and OER

MOOCs – regarded as a Education Research Lab

Mission - Students Centered
  . Big Data Analysis . Faster feedback . More targeted reforms

Technology – Accompany by IT new Technology

Contents and methods
  . Micro Course . Knowledge points . Flipped Classroom
We need MOOCs on GNSS

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1 Background

2 New Education Approach

3 Summary
Summary

• Using the New Approach to help developing countries to prompt space technology and applications, such courseware, online training, MOOCs and etc.

• Extend Cooperation under the framework of ICG and the UN regional centre to improve the quality of education and training.
Thanks for Your Attention!

Prof. Dr. WENG Jingnong

International School, Beihang University
BeiDou International Exchange and Training Center
UN regional centre (RCSSTEAP) in China
Beihang University was the first aerospace university in China.

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