

2014/SOM1/HRDWG/EDNET/029 Agenda item: 5.5

## Chapter 3 Teacher Preparation Program for Secondary Math/Science Teachers

Purpose: Information Submitted by: United States



Human Resources Development Working Group Education Network Meeting Ningbo, China 19-20 February 2014









![](_page_3_Figure_1.jpeg)

![](_page_3_Figure_2.jpeg)

Pure Mathematics	Mathematics Education
 Analytic Geometry Higher Algebra (I) (II) Mathematical Analysis (I) (II) (III) Ordinary Differential Equations Classical Geometry Complex Analysis Probability & Statistics Abstract Algebra (I) (II) Differential Geometry Number Theory Real Analysis Combinatory & Graph Theory	<ul> <li>Modern Mathematics &amp; Secondary School Mathematics</li> <li>Culture &amp; History of Mathematics</li> <li>Introduction to Mathematics Education</li> <li>Assessment &amp; Tests in Mathematics Teaching</li> <li>Panorama of Mathematical Methods</li> <li>Problem Solving &amp; Mathematics Competition</li> <li>Mathematics Teaching Design</li> </ul>
Combinatory & Graph Theory etc.	<ul> <li>Mathematics Teaching Design</li> <li>etc.</li> </ul>

![](_page_4_Picture_3.jpeg)

## Problem Solving and Mathematical Competition

• Aims and Tasks

This course aims to introduce various problem solving methods so as to broaden students' views, enhance problem solving ability as well as mathematics literacy.

Contents

The focus of the course is various problem solving methods with majority of the examples from world-wide famous school mathematics journals (problem sections), mathematics competition problems from various countries, and IMO test problems.

Suggestions for Instruction

This is an elective course for normal students. The course is run in a combination of lectures and students' theme-based discussions. Each lecture will begin with a problem, followed by the instruction on the specific methods, complemented with views from experts and background information. At the end, students will be advised to have further discussions, explorations, extra reading, as well as some exercises for consolidation.

![](_page_5_Picture_8.jpeg)