

HAGI REGULAR COURSE 2012



TECTONICS AND STRUCTURAL GEOLOGY FOR PETROLEUM EXPLORATION & PRODUCTION: THEORY AND APPLICATION FOR INDONESIA



**1 - 5 October 2012 (5-days)
Lombok, Indonesia**



**Expert Course Trainer :
Awang H. Satyana
(BPMIGAS)**

The Indonesian Association of Geophysicists

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Course fee : Rp 26.500.000 (Member)
Rp 27.500.000 (Non-Member)

(Includes: lunch & coffee break, course material, course kit, certificate, photo group)

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COURSE BACKGROUND

Structural geology is a basic ingredient of regional geology, and description of regional structural relations is important, it constitutes much of the basic data of tectonics. Structural features of rocks, the geographical distribution of the features, and their causes are studied by structural geology; and tectonics deal with the study of the broader structural features of the earth and their causes. The scope of tectonics and structural geology are vast, ranging from the broadest framework of the earth and the major crustal elements, through folds and faults, to the fine detail of rock fabric.

In petroleum point of view, tectonics and geologic structures are very important. Distribution of sedimentary basins is controlled by tectonics and majority of the world's petroleum resources have been found in and produced from structural traps. Most of the world's giant fields are structural traps. Broadly interrelated assemblages of geologic structures constitute the fundamental structural styles of petroleum provinces. These assemblages generally are repeated in regions of similar deformation, and their associated hydrocarbon traps can be anticipated prior to exploration. The structural styles are related to the larger kinematics of plate tectonics and, in some situations, to particular depositional histories therefore, most styles have preferred plate tectonic habitats.

Indonesia, being occupies at the triple junction of the three world's major crustal plates, is provided by numerous sedimentary basins and inter-basin areas with various tectonic settings and complicated structural styles. Accordingly, knowledge on tectonics and structural geology and ability to analyze them are very important for exploring and producing basins and structures in Indonesia.

Within this five-day course, participants will learn, refresh and expand his or her knowledge on tectonics and structural geology. Basic science of the topics, based on both classical and modern views, will be reviewed. Recent concepts and technical progress on tectonics and structural geology, based on published literatures to date from many areas of the world, will be presented and discussed. Tectonic and structural cases from Indonesia will be discussed in detail. The course will also put structural analysis of traps within broad picture of petroleum system since the final requirement for the operation of an effective petroleum play is the presence of traps within the play fairway.

After the course, the participants will improve his or her knowledge and ability to do analysis on tectonics of larger areas and basin scale, related to petroleum system and play, and detailed structural analysis within basin and on individual trap. The course will benefit both junior and senior petroleum professionals.***

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COURSE CONTENTS

TECTONIC THEORIES OF THE EARTH

- Geosyncline
- Undation
- Gliding-Gravity Tectonics
- Plate Tectonics
- Terrane Tectonics
- Plume Tectonics

TECTONICS & SEDIMENTARY BASIN FORMATION

- Basins due to Lithospheric Stretching
- Basins due to Flexural Loading
- Basins due to Strike-Slip Deformation

CONCEPTS & METHODS IN STRUCTURAL GEOLOGY

- Theory of Stress and Strain in Rocks
- Rock Rheology
- Nomenclature of Faults
- Nomenclature of Folds
- Fault-Related Folds
- Sedimentary Structures
- Reservoir-Partitioning Structures: Joints
- Fault Gouges-Breccias and Clay Smearing
- Structural Analysis
- Structural Modeling

DEFORMATIONAL ASSEMBLAGES

- Wrench Assemblage
- Compressive Blocks and Basement Thrusts
- Arches, Domes and Sags
- Thrust-Fold Belt Assemblage
- Extensional and Normal Fault Blocks
- Inverted Structures
- Diapiric Structures
- Impact Structures

STRUCTURAL TRAPS IN PETROLEUM SYSTEM

- Description of Traps
- Types of Structural Traps
- Relation with Reservoir and Sealing Rocks
- Timing of Trap Formation and Charging of Petroleum
- Preservation of Traps

TECTONIC SETTING OF THE WORLD'S GIANT OIL & GAS FIELDS

- Continental Passive Margins Fronting Major Ocean Basins
- Continental Rifts and Overlying Sags
- Continental Collisional Margins
- Collisional Margins Related to Terrane Accretion, Arc Collision and/or Shallow Subduction
- Strike-Slip Margins
- Subduction Margins

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TECTONIC & STRUCTURAL CASES IN INDONESIA

- Regional Tectonics of Indonesia
- Tectonics of Indonesian Sedimentary Basins
- Wrench Assemblage of Sumatra, East Java and Salawati
- Fold-Thrust Belts of West Sulawesi Offshore and Central Ranges of Papua
- Collisional Tectonics of Eastern Sulawesi
- Extensional Growth Faults of Tarakan Delta
- Gliding Tectonics of Eastern Kalimantan
- Inverted Structures of Sunda Folds
- Diapiric Structures of Northern Papua

ABOUT THE INSTRUCTOR



Awang Harun Satyana is a Sr. Manager Exploration Assessment and Resource Management of BPMIGAS (Government of Indonesia Executive Body for Upstream Oil and Gas Business). He graduated from the Geology Department of the University of Padjadjaran, Bandung in 1989. He has been working for oil industry for 22 years. He worked for PERTAMINA from 1990-2002, assigning various positions as Exploration Geologist and Regional Geologist. In 2002, Awang joined BPMIGAS, and has assigned various technical and managerial positions.

Awang has actively serviced international and national geological societies by contributing papers, articles, keynote talks, guest lectures and courses. There have been totally 250 publications he made (79 full papers for conferences, 35 articles for journals, 106 invited presentations, keynotes and guest lectures, 24 course manuals, 6 chapters in six books). Several of his papers got awards as the best papers and presentations. As appreciation for his great contribution and dedication to geosciences, "Lasut Award" from IAGI and "HAGI Award" from HAGI was awarded to Awang in 2002 and 2008, respectively. Awang was also the first Indonesian geologist assigned by the AAPG (American Association of Petroleum Geologists) as the Associate Editor of the AAPG Bulletin (during 2006-2007). Awang is an active member of IAGI (Indonesian Association of Geologists), IPA (Indonesian Petroleum Association), AAPG (American Association of Petroleum Geologists), HAGI (Indonesian Association of Geophysicists), and IATMI (Indonesian Society of Petroleum Engineers).

INFORMATION AND REGISTRATION

Phone/Fax : (+62-21) 5250040

Email : training.center@hagi.or.id
secretariat@hagi.or.id

Direct phone to : Arida Chyntia Andriani : +6281288924225

Muh. Setyo Akhasyah : +6285255705951

HAGI TRAINING COORDINATOR

Gustriyansyah Mishar (CNOOC)

Kemala Pergina (GEOTECH)

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REGISTRATION FORM

Course Title : **Tectonics and Structural Geology For Petroleum Exploration & Production: Theory And Application For Indonesia**
Dates : **1 - 5 October 2012**
Venue : **Lombok, Indonesia**
Instructor : **Awang H. Satyana (BPMIGAS)**
Course Registration Fee* : **Rp. 26.500.000,-**(HAGI Member)/ **Rp. 27.500.000,-**((HAGI Non-Member)
**(Kindly ✓ appropriate square)*

PARTICIPANT (Kindly complete the data)

Title* : Mr. /Mrs
Attendance Name : _____
Job Title : _____
Company : _____
Office Address : _____
Phone/Facsimile : _____
Mobile Phone Number : _____
E-mail Address : _____
Contact Person : _____
Phone _____ E-mail _____

HAGI Member* : Yes /No

**(Kindly ✓ appropriate square)*

Special Notifications :

The Investment Fee includes meals (2x coffee break and lunch), course materials, course kits, group photograph, and certificate (exclude hotel and tax). In order to allow sufficient time for arranging travel and processing document, participants are recommended to make an early enrollment. Unless prior arrangements are made by HAGI, payment may be required well 14 days in advance of the course date to guarantee your seat. Registration will be closed on 14 days before course date. Late enrollment may result in course cancellation.

PAYMENT METHOD BY (Kindly ✓ appropriate square) :

Cash addressed to HAGI Secretariat

Bank Transfer in full amount to :

Himpunan Ahli Geofisika Indonesia

Bank BNI Cab. Menteng, Jakarta Pusat

AC : Rupiah (Rp) 0010740147 /Dollar (US\$) 0010740158

Invoice, send addressed to :

PLEASE FAX THIS FORM TO : +6221.5250040 or EMAIL : training.center@hagi.or.id & RECONFIRM YOUR REGISTRATION TO HAGI TRAINING CENTER, CP : Arida Chyntia Andriani Phone +6221.5250040 /Mobile +6281.288924225

Let's register yourself right now!

**HAGI Sekretariat : Patra Office Tower, 20th Floor, Suite 2045
Jl. Jend. Gatot Subroto Kav. 32-34 Jakarta Selatan 12950, Indonesia
Phone/Fax : +6221.5250040
Visit our website : www.hagi.or.id**

Cancellation, Substitution & Non Attendance Policy : Tuition fees are transferable but not refundable. Notification is required to substitute another participant, no later than 5 working days prior to the program, should the nominated person be unable to attend. Cancellation will only be considered, if being cancelled at least 1 (one) week before course exhibited. Late cancellation will be charge 50% from the course fee.