Education Subcommittee Update

Mahmoud ElGizawy

K&M Technology Group

SLB

Education SC Chairperson

Mahmoud ElGizawy

- Global Surveying Domain Manager
- K&M Technology Group, SLB
- PhD & MSc in Geomatics Engineering, U.of Calgary
- 24 years in positioning and navigation (19 years in wellbore positioning)
- Based in Bucharest, Romania

Mission Statement

- ISCWSA Education Subcommittee is an advisory body dedicated to raising awareness of wellbore positioning practices and challenges within the drilling industry through workshops, webinars, eBooks, public lectures, and other media.

Activities

Student Awareness

- Drillbotics Competition (DSATS)
- WPTS Directional Drilling Competition proposal
- PetroBowl
- Student Chapters Engagement

Professional and Young Professional Awareness

- SPE Live and Webinars
- Distinguished Lecture
- Hits and Misses proposal – target young professional
- ISCWSA Course Scholarship
- Reach out to all small service providers.

Educational

- eBook Update
- ISCWSA Course Update

Recognition & Awards

- ISCWSA long time contributors to error models, CA and others

What is Drillbotics?

- Drillbotics® is an international competition for universities to design and build a small drilling rig that uses sensors and control algorithms to autonomously drill a rock sample provided by SPE's Drilling Systems Automation Technical Section (DSATS) and Wellbore Position Technical Section (WPTS).
  - Group A - Option 1 – Generate a virtual model of the rig, the well, and a directional drilling technique.
  - Group A - Option 2 – Generate a simulator to detect and control a kick event.
  - Group B – build and operate a physical rig.
- In the 2023 competition, there is a directional component that will require steering and surveying to hit specified X/Y target coordinates at designated vertical depths. Drilling system must be able to switch between steering modes (slide/rotate) and survey mode (on/off bottom) autonomously.
  - Calculating survey intervals & trajectory be automated.
  - DLS required to hit targets & distance/direction to plan automatically calculated at each

ISCWSA Volunteer Opportunities

- Competition Judges (x2) – Timothy Paton and Matthew Weber
  - Requirements:
    - Judge (remote or in-person) both Group A & B competition performances in May/June 2023
    - Primary contribution is expected to be in directional requirement & surveying practices
  - Time Commitment:
    - Read & familiarize self with Drillbotics Guidelines (~1hr)
    - Competition judging (1day)
- Table Attendants at Competitions (1-2 Per Competition)
  - Requirements:
    - Responsible for attending competitions to hand out fliers & promote ISCWSA
    - Answering questions about the oil & gas industry and recruiting the next generation
  - Time Commitment:
    - Competition day (1day)

ISCWSA Volunteer Opportunities

- Survey Theory Webinar Q&A Host – Marc Willerth
  - Requirements:
    - Many students have expressed interest in attending Q&A sessions with industry experts from various fields. ISCWSA could host several 30-minute Q&A sessions with the students to allow the opportunity to ask questions about survey theory & practice.
  - Time Commitment:
    - 30 – 60 minutes per session
    - Available by email to periodically answer questions

- Challenge Team Member (1-2) – Timothy Paton and Matthew Weber
  - Requirements:
    - Each summer, the Challenge Team meets to review the results of the previous year's competition & set the competition guidelines for the following school year.
    - Stay involved with the Drillbotics Committee throughout the year & commit to reviewing monthly updates from the university teams.
  - Time Commitment:
    - Varies throughout the year

Drillbotics 2024 Schedule

Group A: Competition Schedule

- Phase I (Registration): – 15 Oct 2023
- Phase I (Virtual): Design submission – 31 Dec 2023
- Phase II (Virtual): Judge feedback/initial acceptance of teams – approximately 31 Jan 2024
- Phase II (Final presentation, Q&A and rig model demonstration) – May/June 2024

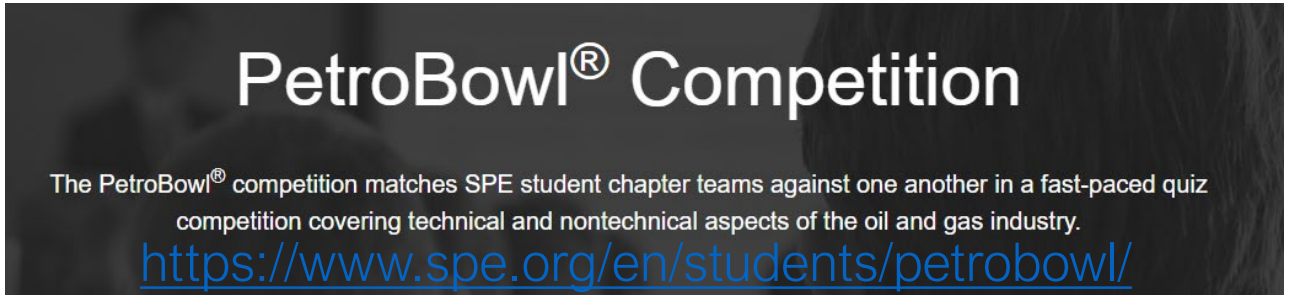
Group B: Competition Schedule

- Phase I (Registration): – 15 Oct 2023
- Phase I (Physical): Design submission – 31 Dec 2023
- Phase II (Physical): Judge feedback/initial acceptance of teams – approximately 31 Jan 2024
- Phase II (Final presentation, Q&A and rig demonstration) – May/June 2024

WPTS Directional Drilling Competition Proposal

- Target university students
- A challenge to hit the target using the directional drilling simulator
- May be add a well plan section?
- Possibly elimination rounds
- Consider school year
- Winner could get a trip to ISCWSA Meeting? $$?
- Might get corporate sponsors
- **Volunteers: M. Elshabrawy Angus, M. Long, Tim, David and M. ElGIzawy to have a proposal before next ISCWSA meeting**

PetroBowl



- Connect with PetroBowl competition team to include questions on WBS
- Questions are needed. Please submit your questions via the link

ISCWSA - PetroBowl Q&A Submittal

ISCWSA - PetroBowl Q&A Submittal

The PetroBowl is an international competition hosted by the SPE that pits student chapter teams against each other in a series of quick-fire Q&A rounds related to the Oil & Gas industry. This is a great opportunity for the ISCWSA to continue spreading the message of the importance of wellbore positioning.

- Volunteer: Josh Albright

Student Chapters Engagement

- SPE student chapters (approx. 400 chapters).
- Connect with SPE
- Get them involved in some of our project. Help them in their thesis, credits..etc
- Volunteers: R. Kirby, Benny and M.Elshabrawy

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SPE Live

- Planned two Webinars and two SPE Live this year
- 02-Mar-2023 SPE Webinar - Completed
  - Geothermal Wellbore Surveying Challenges
  - Ross Lowdon (Speaker) and David Gibson (Moderator)
- 20- Sep-2023 SPE Live - Completed
  - Directional Data and Wellbore Surveying
  - Adrian Ledroz (Speaker) and David Gibson (Moderator)
- 05 – Oct – 2023 SPE Webinar - Completed
  - Why Your Wells May Not Be Where You Think They Are
  - Angus Jamieson (Speaker) and David Gibson (Moderator)
- 15 - Nov - 2023 SPE Live - Coming Up
  - Recommended Practice for Safe Separation, Surveying, and Wellbore Positioning
  - Jonathan Lightfoot (Speaker) and David Gibson (Moderator)

Sep 20, 2023

SPE Live: Directional Data and Wellbore Surveying

Distinguished Lecturer Program

SPE DISTINGUISHED LECTURER℠

Jonathan Lightfoot

Recommended Practice for Safe Separation, Surveying, and Wellbore Positioning

Hits and Misses Proposal

- Consideration to re-offer hits and misses workshop
- 2.5 – 3 days workshop
- Delivered by industry SMEs on Wellbore Positioning
- **Volunteers: Robert, Carol and Mahmoud**

ISCWSA Course Scholarship Proposal

- Tuition Fee: $1200
- Proposal to have a special rate to students and professional in transition
- Scholarship to take the course. Sponsored by ISCWSA
- Volunteers: Suzanne Hawkins and M. Long to receive applications and decide on the scholarship

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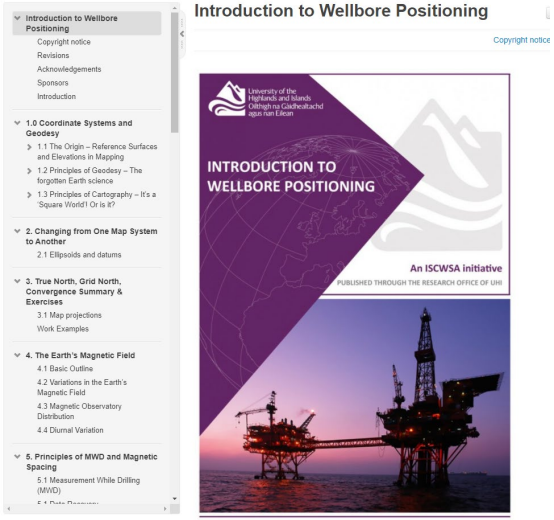
eBooks Update

Introduction to WBP

- New Revision
- Cover update (remove UHI) / new design
- WPTS AC Update
- Error model revisions – rev5 update
- Considering a change to the title
- Angus and Mahmoud to separate Introductory materials and advanced material (move to appendices)
- WBP eBook Web version is available

https://www.manula.com/manuals/iscwsa-ebook/iscwsa-ebook-introduction

- ISCWSA hosting/copy right of eBooks
  - Introduction to WBP
  - Well Interception
  - Survey QC (Work-On-Progress)



eBooks Update

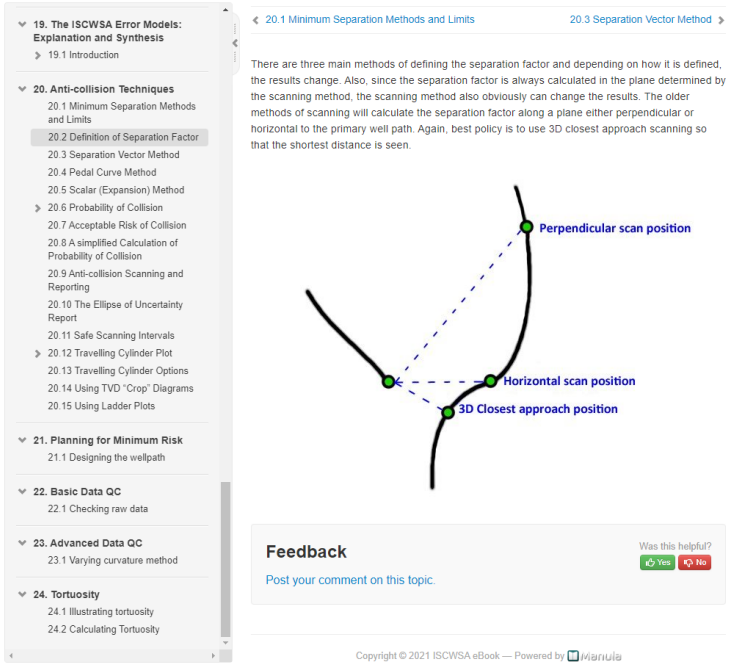
- Call for content updates eBook Introduction to WBS
  - Please contact:

    Prof. Angus at
    Angus.Jamieson@hptech.com

    or

    Mahmoud at

    Melgizawy@slb.com
- Possible to provide feedback directly on the web version



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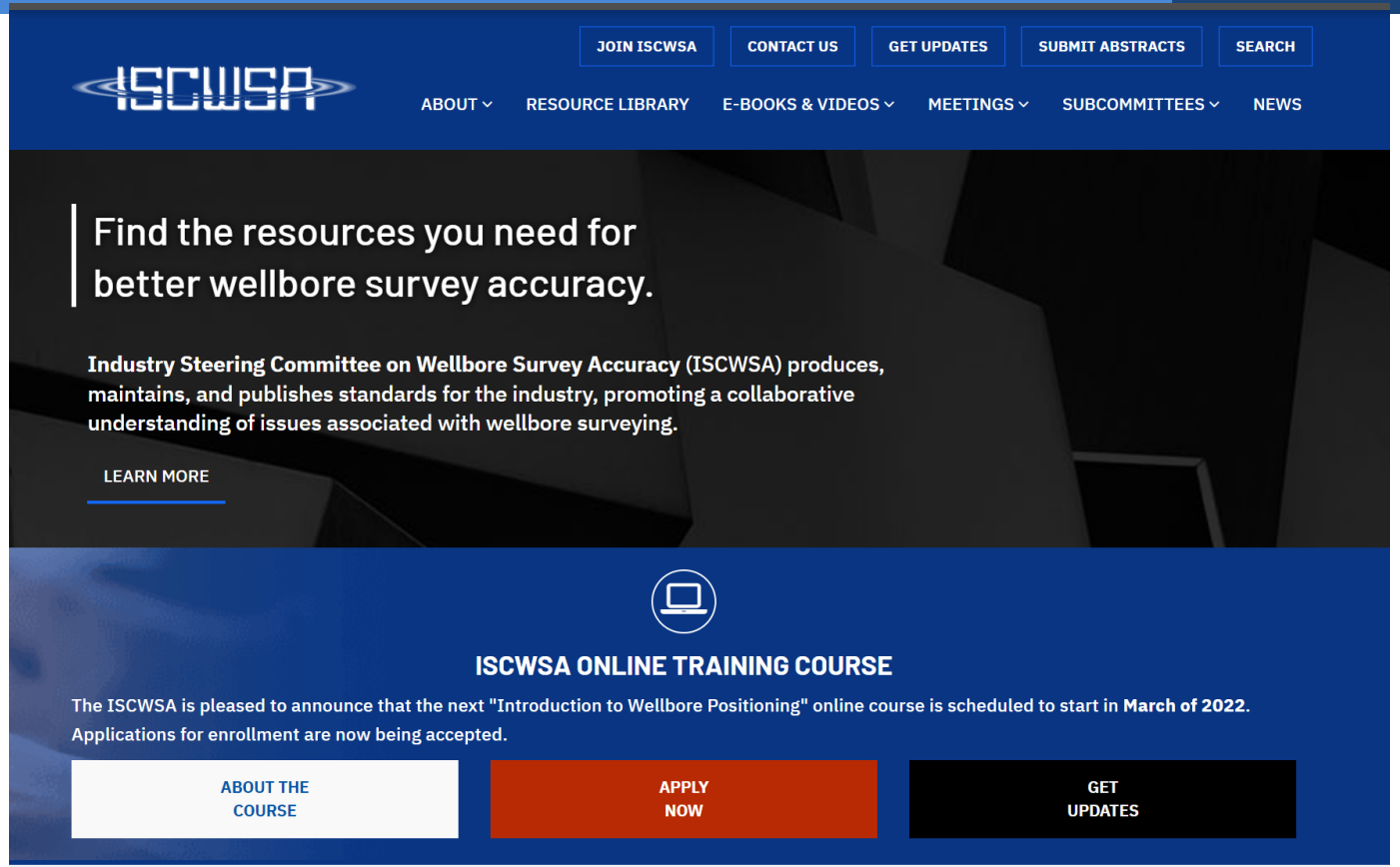
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NEWS
Find the resources you need for better wellbore survey accuracy.
Industry Steering Committee on Wellbore Survey Accuracy (ISCWSA) produces, maintains, and publishes standards for the industry, promoting a collaborative understanding of issues associated with wellbore surveying.
LEARN MORE
ISCWSA ONLINE TRAINING COURSE
The ISCWSA is pleased to announce that the next "Introduction to Wellbore Positioning" online course is scheduled to start in March of 2022.
Applications for enrollment are now being accepted.
ABOUT THE COURSE
APPLY NOW
GET UPDATES

THE ISCWSA WELLBORE POSITIONING COURSE

STARTS SEP 10 2023 **APPLICATIONS ARE NOW BEING ACCEPTED.**

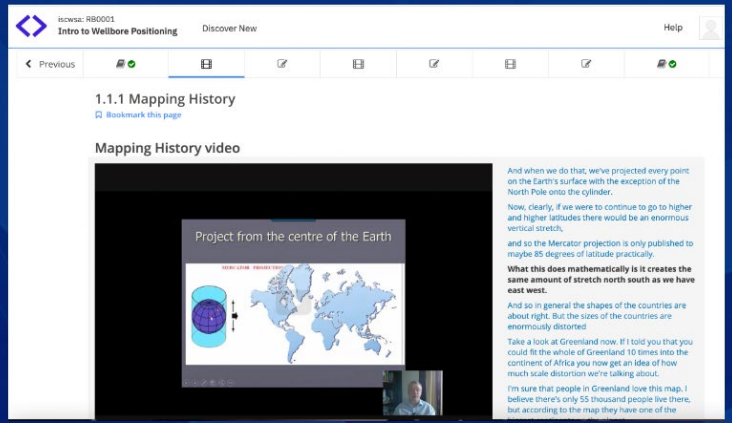
This course is based on the ISCWSA free eBook "Introduction to Wellbore Positioning".
Using a mixture of videos, training exercises, and self-study material, it covers subjects such as Mapping, directional drilling, surveying, survey uncertainties, and high accuracy...

APPLY NOW

About the ISCWSA Wellbore Positioning Course

This course is based on the ISCWSA free eBook "Introduction to Wellbore Positioning".

Using a mixture of videos, training exercises, and self-study material, it covers subjects such as mapping and geodesy, directional drilling, surveying, survey uncertainties, and high accuracy directional drilling.



STARTS SEP 10 2023

APPLICATIONS ARE NOW BEING ACCEPTED.

ENDS NOVEMBER 2023

TUITION FEE $1,200

APPLY NOW

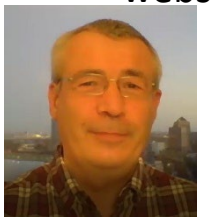
Course Benefits

- Industry recognized certificate
- Be more informed in your work
- Expert instructors
- Paced to fit working students

FAQs & Support Help

How do I earn this course's Certificate?

- ISCWSA took over the ISCWSA eBook based “Introduction to Wellbore Positioning” training course from the UHI, and converted the course to run under a modern Learning Management System (edX) through the ISCWSA website.
- It now includes a series of videos lectures, readings, problems, exercises, and simulation examples, with Continuous Assessment grading.
- Registration for the course is through the iscwsa.net website, and it runs on an iscwsa.net Training Server



Week 0: Introduction – Connections

Week 1: Mapping and Geodesy
- Week 1-1 : Mapping, Projections, and Datums
- Week 1-2 : North References and Scale Factor

Week 2: MWD, Earth's magnetic field, QC, and Corrections
- Week 2-1 : MWD and Earths Magnetic Field
- Week 2-2 :Basic QC and Survey Corrections

Week 3: Drilling Rigs, Well Planning, and BHA design
- Week 3-1 : The Drilling Rig
- Week 3-2 : Introduction to Well Planning
- Week 3-3 : Introduction to BHA Design
- Week 3-4 : Directional Drilling Simulator

Week 4: Data Management, Quality Control, and Depth
- Week 4-1 : Data Management and Data Audits
- Week 4-2 : Depth Measurement, Uncertainty, and Corrections

Week 5: Survey Tools and Survey Calculations
- Week 5-1 : Survey Tool Types
- Week 5-2 : Survey Calculations

Week 6: Survey Uncertainty and Collision Avoidance
- Week 6-1 : Uncertainties and how they propagate
- Week 6-2 : Survey Uncertainties and Error Models
- Week 6-3 : Anti-collision terminology, planning and operations

Week 7: High Accuracy Drilling
- Week 7-1 : Survey Corrections for High Accuracy Drilling
- Week 7-2 : Introduction to Ranging Technologies
- Week 7-3 : Exercise - Drill Relief Well

Week 8: Revision Time and Examinations

Recognition of contributor to ISCWSA (error models..etc)

- Add a new page “Hall of fame” to ISCWSA.net
- Add previously recognized distinguished members
- Benny has complied a list of contributors.

Acknowledgement

- Education SC members are acknowledged for their participation and contribution to the SC activities
- 20 Participants in last meeting

- Georgy Rassadkin, Gunnar
- Mike Long, Roundlab
- Tyler Longeaw, Roundlab
- Suzanne Hawkins, Baker
- Rustam Rakhmangulov, K&M
- Nicholas Zachman K&M
- Francisco Huitron, K&M
- Robert Wylie, XnDrilling
- Ayush Raj Srivastava, XOM
- Malloree Schurr, SQC
- Ryan Kirby, SQC
- David Erdos, Erdos Miller
- Josh Albright, SQC
- Timothy Paton, SQC
- Mohamad Elshbrawy, Shell
- Adrian Castro, Turnazontal
- David Gibson, Gibson Reports
- Carol Mann, DGI
- Benny Poedjono, Independent