Education Subcommittee Update

Mahmoud ElGizawy

K&M Technology Group

SLB

Speaker Bio

Mahmoud ElGizawy

- Drilling Surveying Domain Manager
- K&M Technology Group, Schlumberger
- PhD & MSc in Geomatics Engineering, U.of Calgary
- 23 years in positioning and navigation (18 years in wellbore positioning)
- Based in Abu Dhabi, UAE

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.

Agenda

- SPE Live and Webinars
- Students Awareness
  - WPTS Directional Drilling Competition proposal
  - Drillbotics Competition (DSATS)
  - PetroBowl
- Distinguished Lecture
- eBook Updates
- ISCWSA Course update

SPE Live

- Planned two Webinars and two SPE Live this year
- 02-Mar-2023 SPE Webinar Completed
  - Geothermal Wellbore Surveying Challenges
  - Ross Lowdon – Speaker
  - David Gibson – Moderator
- 20- Sep-2023 SPE Live
- 05 – Oct – 2023 SPE Webinar
- 15 - Nov - 2023 SPE Live

Proposed topics

- Webinar:
  - Your wells might not be where you think they are – Angus Jamieson
  - Survey Theory – Nestor Eduardo Ruiz
- SPE Live:
  - ISCWSA / WPTS introduction – Adrian and Hans
  - Recommended Practice for Safe Separation, Surveying, and Wellbore Positioning – Jonathan Lightfoot
- Actions:
  - Post ahead of time on linkedin
  - Email WPTS members

Student Awareness – How to Attract Young Generation

- Proposal to have a WPTS competition using the Directional Drilling Simulator
- Drillbotics
- PetroBowl
- SPE Student Chapters reach out – ISCWSA Course Scholarship

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 and Angus to have a proposal before next Oct meeting

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.

Volunteer Opportunities for ISCWSA

- Competition Judges (x2) – David Gutierrez, Nestor Eduardo Ruiz
  - Requirements:
    - Judge (remote or in-person) both Group A & B competition performances in May/June 2023 (Location & Dates TBD)
    - Primary contribution is expected to be in directional requirement & surveying practices
  - Time Commitment:
    - Read & familiarize self with Drillbotics Guidelines (~1 hr)
    - Competition judging (1 day)
- Table Attendants at Competitions (1-2 Per Competition) – David Gutierrez, Suzanne Hawkins
  - 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 (1 day)

Volunteer Opportunities for ISCWSA

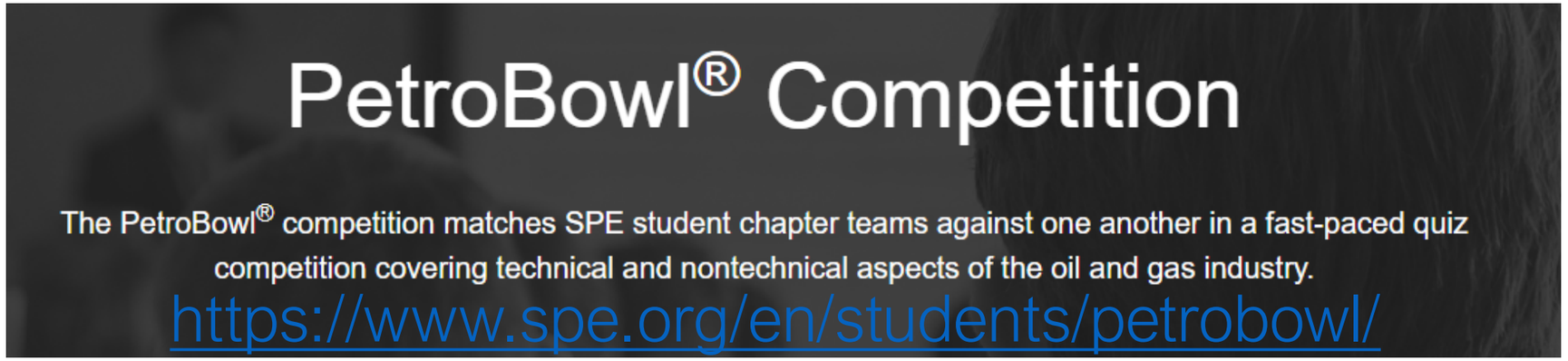
- Survey Theory Webinar Q&A Host (As many as are willing) – Name 1, Name 2
  - Requirements:
    - Many students have expressed interest in attending Q&A sessions with industry experts from various fields. ISCWSA could host several 30-minute Q&A sessions with the students to allow the opportunity to 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) – Name 1, Name 2
  - 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

Competition Schedule

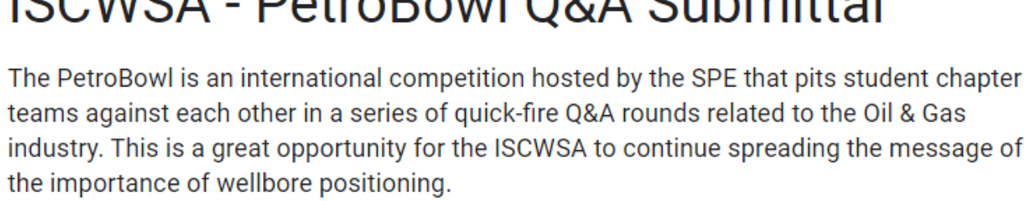
- Houston, Texas – May 21, 2022 (Virtual)
- Celle, Germany – June 2022 (Virtual)

PetroBowl



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

ISCWSA - PetroBowl Q&A Submittal



ISCWSA Course Scholarship Proposal

- Tuition Fee: $1200
- Proposal to have a special rate to students and professional in transition
- Or Student Scholarship to take the course. Sponsored by ISCWSA – Gibson Reports offer to sponsor the first scholarship
- Volunteers: small committee to receive applications and decide on the scholarship

Distinguished Lecturer Program

SPE DISTINGUISHED LECTURER℠

Jonathan Lightfoot

Recommended Practice for Safe Separation, Surveying, and Wellbore Positioning

Others

- PetroBowl
  - David Gutierrez to connect with PetroBowl competition team to include some questions on WBS
  - https://www.spe.org/en/students/petrobowl/

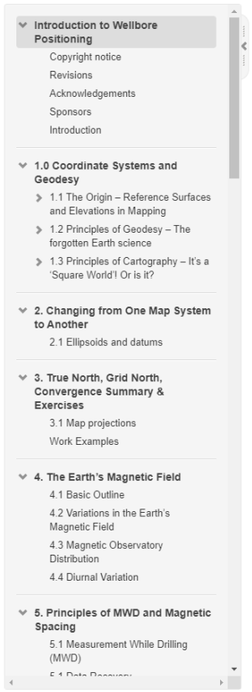
- ISCWSA webpage search functionality is limited
  - Documents require to be tagged with keywords to make them searchable
  - Effort had been started on this in the past
  - Need to gain traction and get it done

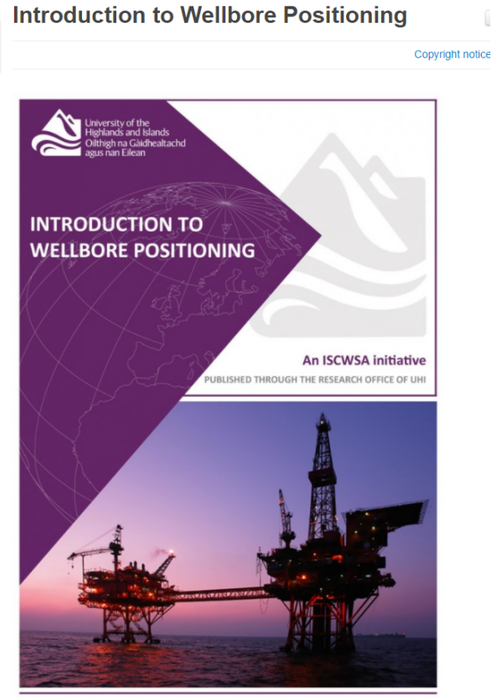
eBooks Update

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
- Volunteer: SME to separate Introductory materials and advanced material (move to appendices)
- WBP eBook Web version is available

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





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

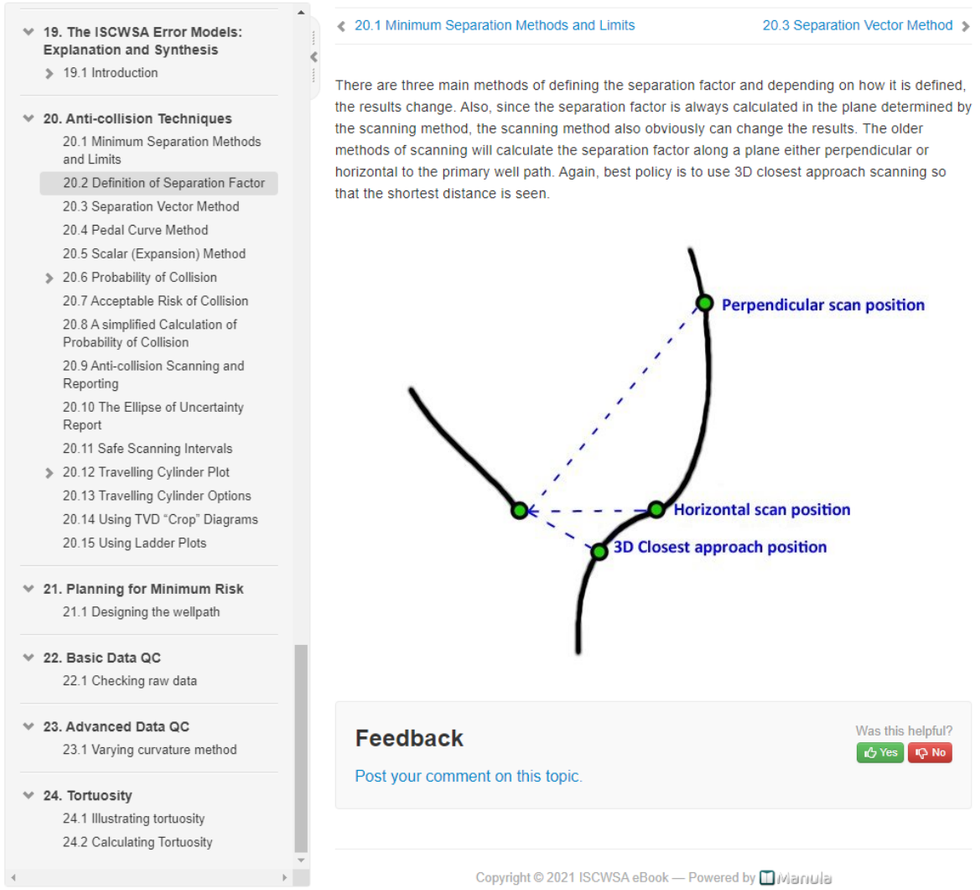
eBooks Update

- 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



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

ISCWSA Course Progress

- Course Director: Robert Wylie
- Course Head Instructor: Prof. Angus Jamieson

- 11 students graduated from first Cohort
- Cohort # 2 started on March 28th , for completion by early June
- 7 Modules. One module per week, with three week deadline to complete assignment
- Recommended 4 hours per week
- 14 students signed up

- The plan is to have up to 20 students per course, course duration is 10 weeks, offered several times per year

- Detailed Updates to follow by Robert Wylie

Update to Mission Statement

- Current Mission:

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.

- Currently under discussion among the Education SC members

Acknowledgement

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

- Carol Mann, DGI
- Angus Jamieson, H&P
- David Gibson, Gibson Reports
- David Guieterrez, Superior QC
- Robert Wylie, XnDrilling
- Mark Frasier, SDI
- Jamie Dorey, SDI
- Benny Poedjono, Independent
- Nicholas Zachman K+M
- Suzanne Hawkins, Baker
- Grace Nnorom Shell
- Marcel Ngueguim, Equinor
- Tim Paton, Superior QC
- Mohamad Elshbrawy, Shell
- Marina Ferreira Rego, SLB
- Nestor Eduardo Ruiz, BlueOcean
- Shaun Hingerty, performance drilling services
- Barry Smart, Gyrodata
- Abdullah AlDossay, Saudi Aramco

Update :
ISCWSA Online Training Course

"Introduction to Wellbore Positioning"

Robert Wylie

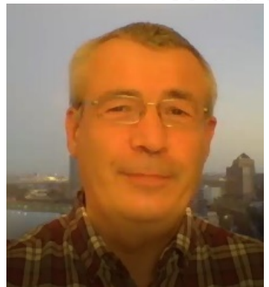
10th March, 2023

x^nDrilling, Inc

- 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



Title of slide

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

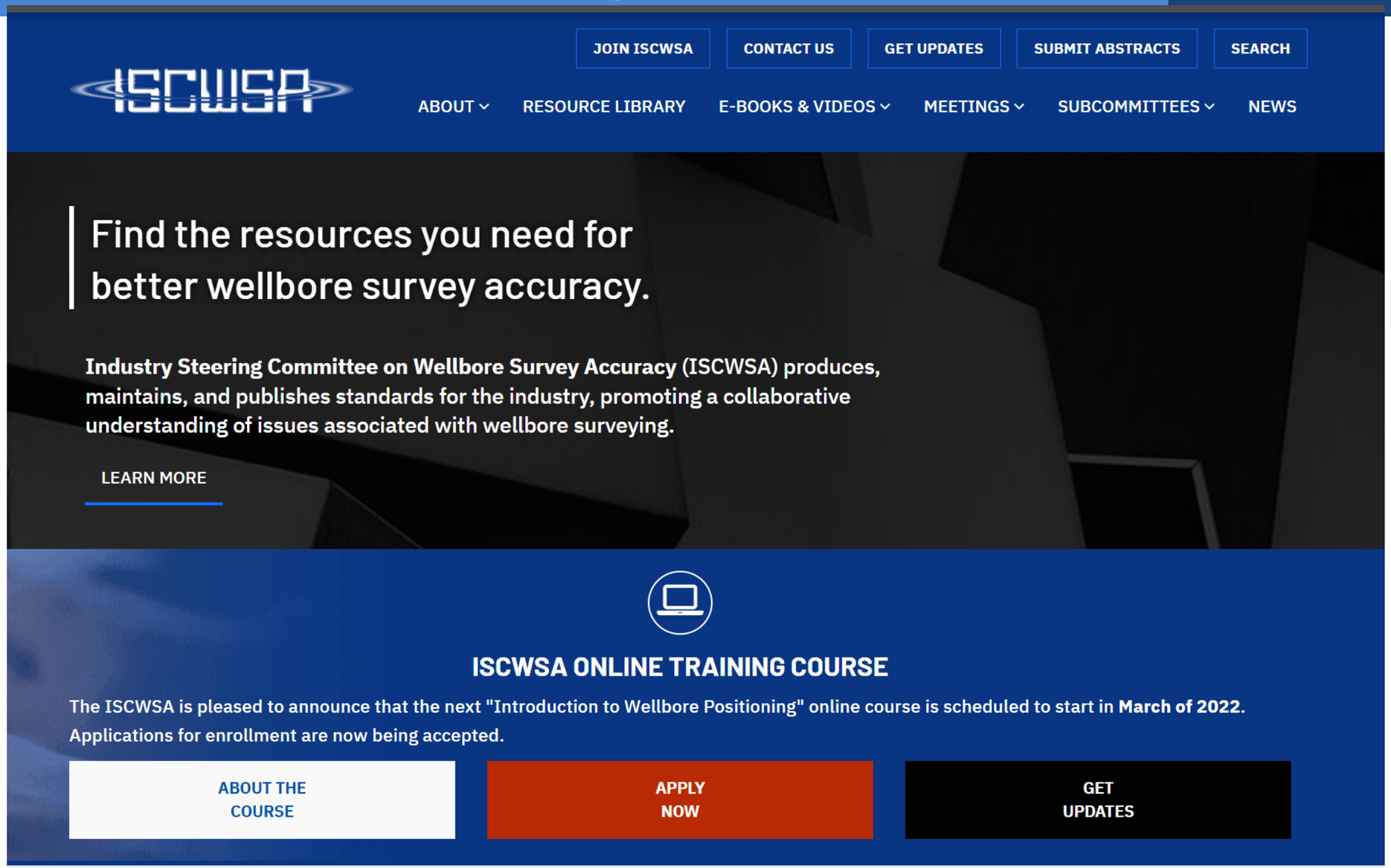
Week 4: Data Management, Quality Control, and Depth
- Week 4-1 : Data Management and Data Audits
- Week 4-2 : Depth Measurement, Uncertainty, and Corrections

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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SUBCOMMITTEES
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 2022 **APPLICATIONS ARE NOW BEING ACCEPTED.**

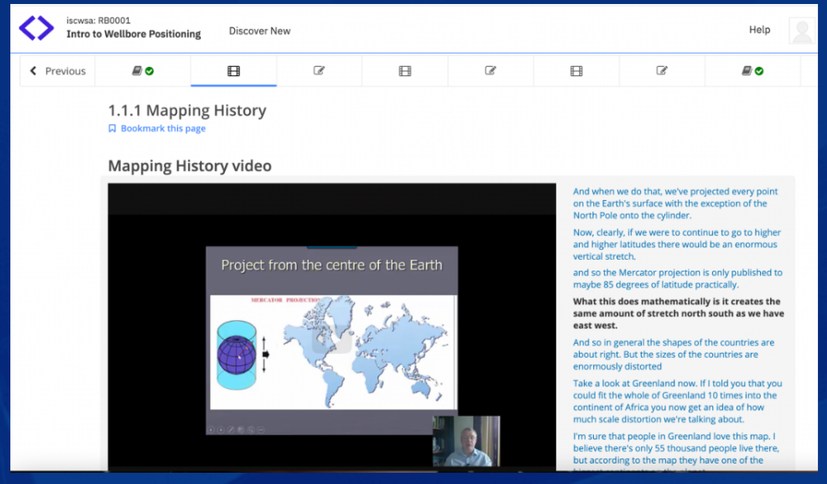
This course is based on the ISCWSA free eBook "Introduction to Wellbore Positioning".
Using a mixture of videos, training exercises, and self-study material, it covers subjects such as Mapping, directional drilling, surveying, survey uncertainties, and high accuracy...

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.



What's in this course?

The course has 7 main teaching modules, in addition to introductions and reviews. It is expected that 2 modules will be completed every three weeks. Click on each "Week" Module to for an overview of what is included.

STARTS SEP 2022

APPLICATIONS ARE NOW BEING ACCEPTED.

ENDS NOV 2022

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

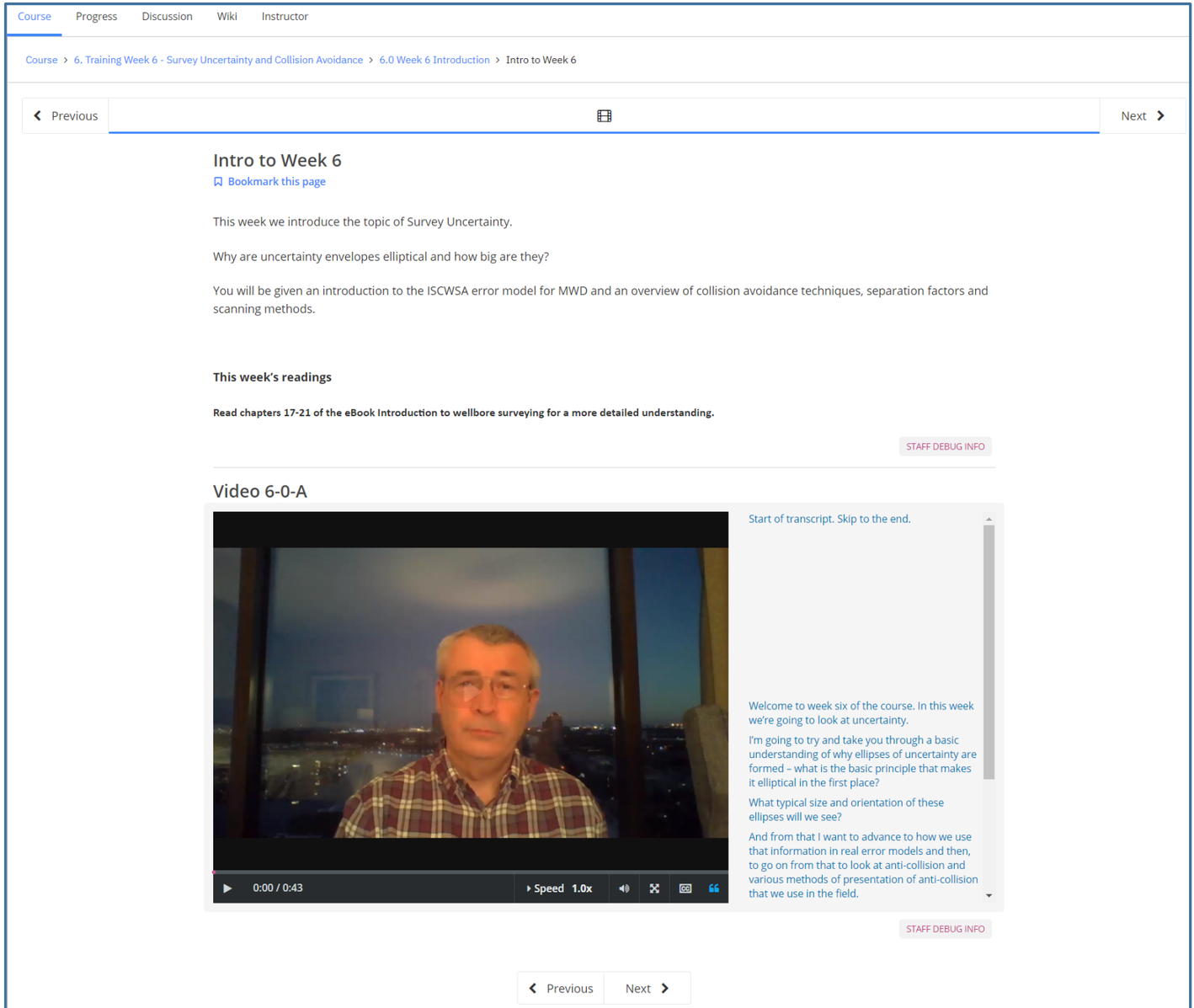
How do I earn this course's Certificate?

How long do I keep the course?

What daily hours are recommended?

Course Features

- Easy Navigation
- Full video transcripts
- Progress tracking
- Variety of learning techniques
- Student interactions and discussion boards
- Practical exercises on useful topics



- Currently running the fourth group (cohort) of students through the course
- 42 graduates from 3 cohorts
- Cohort #4 has started in January, and it about to finish
- Cohort #5 will start March 26th. Some students registered. Open for more students to register

Cohort #1

RB010101	Abdelrahman Afify
RB010102	Teddy Chen
RB010103	Glenna Crookston
RB010104	David Gutierrez
RB010105	Saleel Kolakkodan
RB010106	Andrew Pare
RB010107	James Powell
RB010108	Georgy Rassadkin
RB010109	Nicholas Robertson
RB010110	Joseph Sanders
RB010111	Tyler Trammell

Cohort #2

RB010201	Josh Albright
RB010202	Alec Berarducci
RB010203	Andres Diaz
RB010204	Joel Dunn
RB010205	Timothy Gee
RB010206	Mike Long
RB010207	Paul Reynerson
RB010208	Sheldon Schmidt
RB010209	Kevin Sutherland
RB010210	zackary whitlow

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RB010203	Andres Diaz
RB010204	Joel Dunn
RB010205	Timothy Gee
RB010206	Mike Long
RB010207	Paul Reynerson
RB010208	Sheldon Schmidt
RB010209	Kevin Sutherland
RB010210	zackary whitlow

Virtual Talks

- Impact of Poor Wellbore Surveying Impact on Your Asset
  - Moderated: Angus Jamieson
  - Speakers: Two Keys industry leaders
  - Actions: confirm speakers and date

- Case Studies on how important the wellbore surveying practices
  - Led by Harald Bolt & Heather Vannoy