



Nigerian Association of Petroleum Explorationists

Geoscience and Mining Professional and Curriculum Development

University Assistance Program (UAP)



Preamble

- **The main purpose is to ensure safety of life, health, and properties and to promote the public welfare.**
- **The need to assess qualifications of applicants seeking licensure as professional geologists and Mining Engineers.**
- **The need to take Re-fresher courses to update practitioners' knowledge of new developments**
- **To help candidates prepare for the registration to be administered by COMEG**



BASIC FACTS

- **COMEG Decree 40, 1990, established COMEG**
- **Professional development of Geo-scientists and Mining Engineers**
- **Code of Conduct and Ethics for professionals**
- **Pre requisite for COMEG registration, certified professionals**
- **Pre requisite to practice geoscience and mining**
- **Multi disciplinary nature of practice in the oil and gas industry**

- **Committees – Petroleum (Oil and Gas), Solid Minerals, Hydrogeology and Engineering Geology**

- **Roles – COMEG, NAPE, NMGS (and later involvement of OPTS, Ministry of Solid Minerals & Parastatals, Ministry of Petroleum Resources & Parastatals, etc.)**



Who for?

- **Continuing Education Program (CEP) to be undertaken by graduate geoscientists and Mining Engineers.**
 - This can be applied towards candidates applying for the membership of COMEG.
- **Continuing Professional Program (CPP) to be undertaken by registered geoscientists.**



Curriculum Development - Oil and Gas

- Part 1: Geology – exempt B.Sc / M.Sc Geology, compulsory for Geophysics graduates
- Part 1: Geophysics – exempt B.Sc / M.Sc Geophysics, compulsory for Geology graduates
- Part 2: For ALL, no exemption
- Part 3: For ALL, no exemption

- Modules – Each part contains courses/examination in 8 modules, i.e. Petroleum Geology, Petroleum Geophysics, Law, Finance, Economics, Reservoir Management, Petrophysics, Drilling

- Part 2 & 3 would contain additional courses and examination in Project Management, Data Management and Integration, Safety/Health/Environment, Community Relations/Security, Unconventional Resources



- **Part A – Basic Geology – The Fundamentals of Geology**
- **General Paper**
 - Igneous Petrology
 - Metamorphic Petrology
 - Sedimentary Petrology



- **Part B – Specializations – The Practice of Geology**

- **Petroleum Geology**
- **Engineering Geology**
- **Hydrogeology**
- **Applied Geophysics**



Geology Courses - Part 1,2,3

- Basic Petroleum Geology, Petrophysics and Log Evaluation/Log Interpretation, Open Hole Logs/Cased Hole Logs
- Seismo Stratigraphy, Sequence Stratigraphy, Correlation Methods, Deepwater Stratigraphy, Sedimentology/Environment of Deposition, Chrono-Biostrat
- Core Description and Analysis, Reservoir Characterization and Management, Clay Mineralogy/XRD, Fractured Reservoirs, Clastic/Carbonate Reservoirs, Petrology
- Geopressure Studies/Pore Pressure Prediction, Geomechanics, Biostrat-Geochemistry/Basin Analysis/Petroleum Systems, Salt Tectonics, Mud Logging/Sampling/Analysis/Storage, Fluid Sampling/Testing
- Seismic Interpretation. Subsurface Mapping, Borehole Geology, Facies Modeling, Integration of E&P Data. Regional Geology, Geostatistics/Gridding/Contouring/Upscaling
- Geological Operations and Wellsite Geology/Duties, Integrated Interpretation Techniques, Prospect Evaluation/Risks/Volumetrics, Well Placement Fundamentals. Properties of Reservoir Fluids.



Geophysics Courses - Part 1,2,3

- Basic Petroleum Geophysics, Acquisition Methods in different Terrains - Marine, Land, Swamp, Processing Methods, Seismic Imaging
- Seismic Interpretation, Seismic Stratigraphy, Mapping/Gridding and Contouring techniques, Seismic Facies
- Quantitative Geophysical Methods, DHI/AVO Analysis, Inversion/Fluid Substitution Techniques, 3D Seismic Attributes
- Electric Logging/Borehole Seismic, Synthetics, VSP/Seismic Velocity, Depth Imaging, Depth Conversion
- Seismic Data Management, Seismic Data Storage
- Seismic Geomechanics, Rock properties



General Courses - Part 1,2,3

- Communication and Presentation Techniques, Report Writing, Business Proposal /Packaging, Negotiation Skills
- Project Management, Petroleum Economics, Fiscal Policies, Petroleum Provinces of the World, Oil Deals, Oil Pricing/Energy Security, Risk Analysis
- Drilling, Reservoir Management, Integration Methods, Production/Well Intervention
- Safety/Health/Environment, EIA/Waste Management
- New Business Development, Opportunity Capture and Asset Disposal, Abandonment, Bidding Rounds, Scouting/New Ventures
- Financing Exploration and Appraisal/Development Projects, Budgeting/Cash Calls/Cost Recovery, Cash Flows/Profit and Loss
- Field Development Plans, Gas monetization, Integrated Technical Work Program



General Courses - Part 1,2,3

- Regulatory/Permits and Legal Frameworks, Fiscal Terms, PSC/JV/Sole Risks/Novation/Agreements, Mineral Laws/PIB/NC Acts, TECOM/FINCOM/OPCOM,
- World Energy Demands/New Trends,, Heavy Oils and Tar Sands/Unconventional Resources, Completions, HPHT, Enhanced Oil Recovery,
- Real Time Measurements and Operations, Type Logs, Simulation and Modeling
- Drilling - directional drilling, mud chemicals/fluids/cementing, measurements while drilling, drill bits, drilling rigs, MPD, drilling tools, fishing, sidetracks, BOP, casing designs, directional drilling and surveying.
- Well Testing/Extended Well Tests/Early Production. Sand Control. Gas Injection/Water Injection, Drive Mechanism. Production Platforms/FPSO/Pipelines.
- Tendering/Technical Bidding/Contract Evaluation. Community Relations/Social Services/CSR. International Energy Agencies, R&D, Reserves (P, 2P, 3P)



Required Competencies

- Petroleum Geology, Petroleum Geophysics,
- Petrophysics, Geomechanics/Pore Pressure
- Economics
- Finance
- Law
- Community Relations/Security
- Drilling/Borehole Stability, Reservoir Management, Operations, Production
- Project Planning/Management, Software/IT/Data Management, Gas/Condensate, Unconventional Resources
- Safety/Health/Environment
- Asset Management/Optimization/Disposal
- Asset Capture/New Ventures/New Business



**Thank you for
your attention**