

NAPE UAP LEADERSHIP FORUM

**Center of Excellence
in Geosciences and Petroleum Engineering,
(CoE)
University of Benin**

March 2013

“A renewed strategy of intervention and support from within”



Center of Excellence in Geosciences and Petroleum Engineering

- **Introduction**
- **Academic Planning and Implementation**
- **Infrastructure and Teaching**
- **Where we are**
- **Challenges**
- **Look Ahead**



Objectives of the CoE

- Promote Academia-Industry linkage in a sustainable way, through industry presence in the University
- Encourage and promote active research and development activities through active collaboration of academia and industry professionals and experts
- Create opportunities for developing industry-ready man-power from Nigerian tertiary institutions
- Encourage international linkage and collaboration through R&D



CoE - The Goals

- **Center to be Self-Sustaining within 3-5yrs, through**
 - **Funded Research and Studies**
 - **Endowments and**
 - **Tuition**
- **Rallying point for industry-supported initiatives in Tertiary institutions (integrated and Multi-disciplinary R&D studies; Professorial Chairs and Sabbaticals, Structured Internship program and intake to E&P Companies, etc.)**
- **Promote Industry-University collaboration and support**
- **Center for training industry-ready manpower**
- **Key initiative for Local Content Development**



Governance Structure

- TRUST DEED
- Governance Framework
- Administering Bodies,
 - **Board of Trustees (University and Industry Leaders)**
 - **Academic Board (Lecturers)**

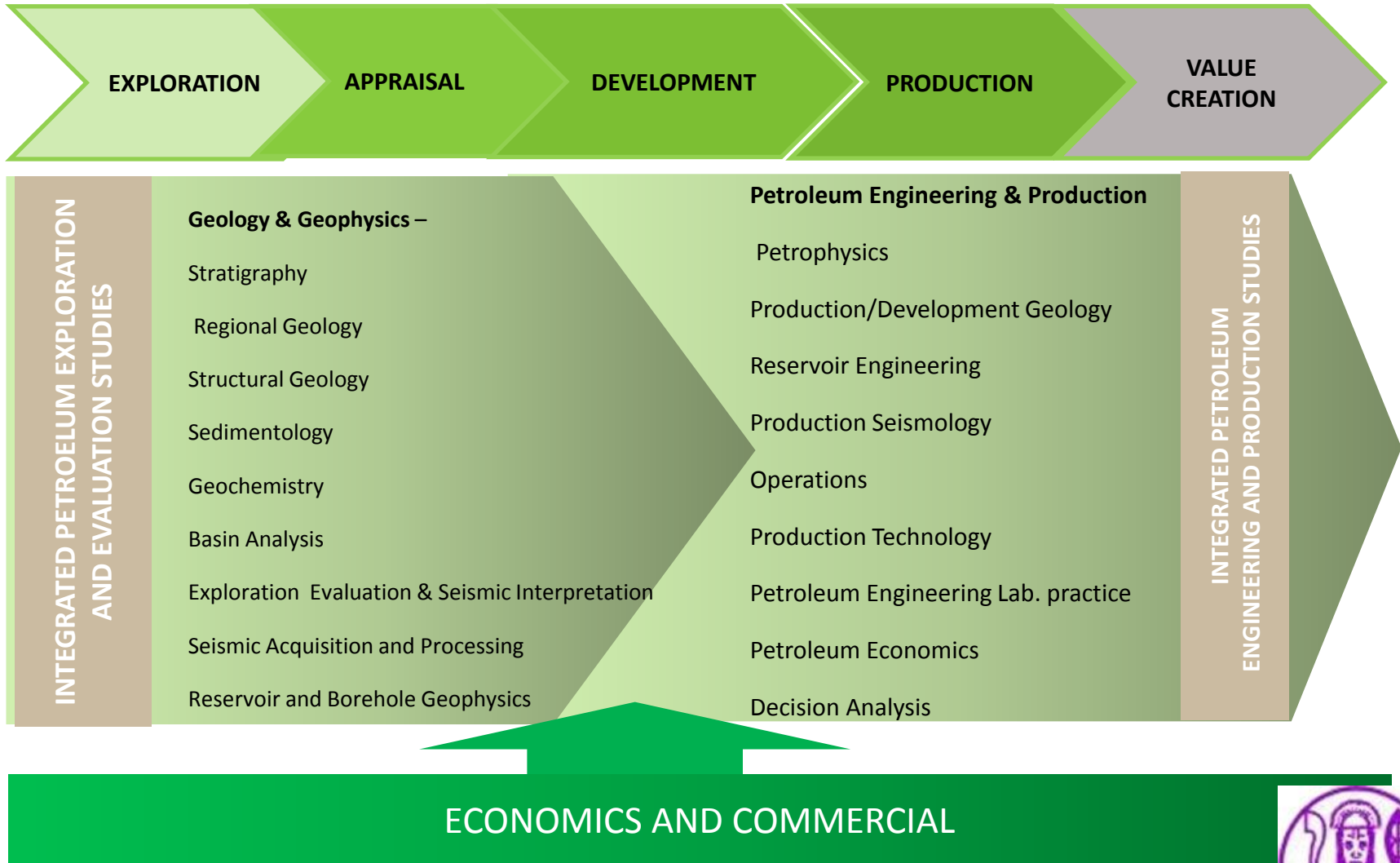


Development Process –Academic Program

- **Curriculum Development Workshop**
- **Engagement and Interface with the ‘University of Benin Working Group’**
- **Approval of Curriculum and Senate Approval**
- **Engagement and Endorsement of Professional organizations**
- **Structured Interview and Selection Process in addition to minimum entry requirements for PG studies in Uniben**
- **Internal Interface and Management Process: University-CoE**
- **Admission and Kick-Off**
- **Progress Monitoring**



Hydrocarbon Life Cycle Chain Evaluation and Disciplines – Basis for Curriculum Development



CoE - Program and Planning

The CoE will offer the following programs:

- **Masters Degree (by Project)**
 - Integrated Petroleum Exploration and Evaluation (Geology Option)
 - Integrated Petroleum Exploration and Evaluation (Geophysics Option)
 - Integrated Petroleum Engineering and Production Studies

Program Duration

- 18 Calendar Months
 - 12 Months of Lectures, Team Course projects, Self Learning, Hands-on training and Field Trips
 - 6 Months of Internship in the E&P Workplace

Delivery Mode:

- Lecture/Tutorial/Team Projects/Term Papers/Internship
- Quarterly Examination preceded by Tutorials with Advisors



Program Schedule

0-6 Months

7 – 12 Months

13-18 Months

FUNDAMENTALS

- Introduction to Petroleum Geology
- Introduction to Petroleum Geophysics
- Introduction to Petroleum Engineering
- Environmental Management
- Safety
- GIS in E&P
- Geological Field trips

CORE

Geology Option

- Applied Stratigraphy
- Structural geology
- Hydrocarbon Systems Analyses
- Applied Geochemistry
- Regional Geology
- Exploration Evaluation
- Field Trips

Geophysics Option

- Seismic Survey and Data management
- Processing Geophysics
- Reservoir Geophysics & Quantitative Interpretation
- Borehole Geophysics
- Exploration Evaluation
- 3D Seismic Interpretation
- Field Trips

Pet. Eng. Option

- Petrophysics
- Development Geology
- Reservoir Engineering
- Production Engineering
- Introduction to Well Engineering
- Natural gas Development
- Petroleum Engineering Lab. Practices
- Decision Analyses
- Field Trips

WORK PLACE EXPERIENCE

- Industrial Attachment

Leadership and Self Development Lecture Series

- Critical Thinking
- Presentation Skills
- Report Writing
- Time Management
- Individual and Team Working Experience
- Change Management

Aims & Objectives include:

- Emphasize learning skills
- Improve self awareness and relationship skills
- Simulate real life working experiences
- Delivery by special lectures series and team experience

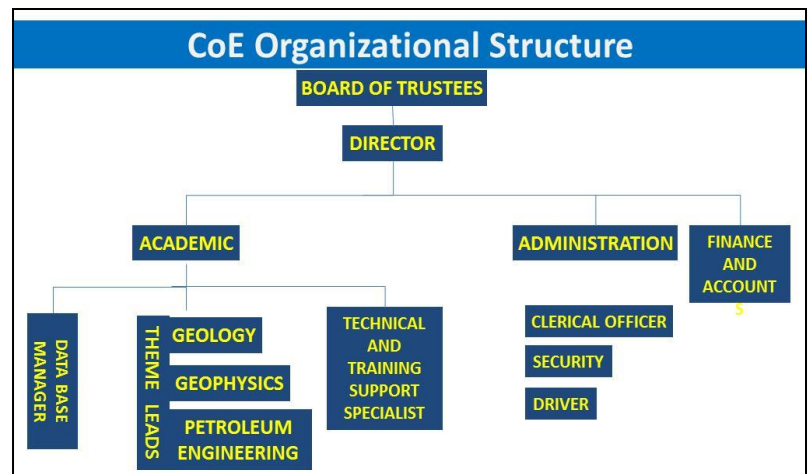


CoE Infrastructure and Organisation

- Dedicated building (Offices, Laboratory/library)
- 21 workstations
- 2 nos. Training data sets
- PETREL interpretation and Modeling software
- IT, Communication Infrastructure to drive work processes and learning
- Books and e-learning sets
- Large and broad-based resource , with significant emphasis on industry experience
- Aim to emphasize on applications of fundamental concepts and industry practice
- Lean resource pool for improved efficiency



Resource Statistics (May 2012)				
	UNIBEN	SHELL	OTHERS	TOTAL
Geology/Geophysics	3	7	8	18
Petroleum Engineering/ Production Engineering	2	12	9	23
Others	2	3	3	8
Total	7	22	20	48



Cost Analysis (2012 -2013 Estimates)

- **Infrastructure*** **N25Million**
- **Hardware** **N50Million**
- **Software**** **N28Million**
- **Data**
- **Recurrent Expenditure***** **N75Million**

** University counterpart funding*

*** Subsidised license fee from Schlumberger*

****Shell funding Q4 2012-2013 (does not include time of company resource personnel)*



CHALLENGES

- **Autonomy**
 - Streamlining of process framework within the university system
- **Funding**
 - High cost of subsurface interpretation software
 - High infrastructure and facilities maintenance
 - Attractive remuneration for Resource persons
- **Sustainable Growth**
 - Standards
 - New technology and concepts



Look Ahead

	Year 1	Year 2	Year 3	Year 4
CAPACITY BUILDING and CENTRE	Expansion of Program Activities			
	Centralisation of university Support Initiatives			
	Grow resource base			
	Sponsored Projects			
	TEACHING and Research			
FUNDING STRATEGIES AND MODELS	SHELL & EXTERNAL		INTERNAL & EXTERNAL	
	<ul style="list-style-type: none"> • Sponsorships • Industry Support • Funded Projects 			

Growth Strategy – Multiple funding sources to underpin sustainability

Collaboration and Support from other Industry partners

Collaboration with other Centers

- curriculum development
- shared resource for effective learning and teaching
- Implementation of R&D studies

WHAT WE NEED

- Additional software**
- Hardware maintenance**
- Students Sponsorship and Grants**
- Grants/Sponsorship of teaching resource/Courses**
- Field work**
- Support/Grants for workshops and Conferences**
- Books, Journals, e-Learning sites**



Recommendations

- ❑ **Sustain the Centers for training and development of YOUNG PROFESSIONALS**
- ❑ **Stronger collaboration between and coordination of industry operatives and their support strategies**
- ❑ **Broad industry-based support for all Centres**
- ❑ **Visible and active roles for Professional bodies (NAPE, SPE)**

