



## AMGC Director General's Message



On afternoon of Monday 12<sup>th</sup> February 2024, The African Minerals and Geosciences Centre (AMGC) has received a UNDP delegation of around 60 persons for an official familiarization visit. The Director General of AMGC received and held a meeting with representative of BRGM, the French Geological Survey on 13<sup>th</sup> 2024 at AMGC premises.

AMGC through its Industrial Minerals Department imported an entire set of kiln elements from South Africa to replace old successfully by a local Technician on 23<sup>rd</sup> February 2024 enabling the department to produce the customers pending orders effectively. AMGC team led by the Director General participated in the high-level consultation meeting on the Analytical Fingerprint (AFP) Project Phase implementation in the Great Lakes region held on 26<sup>th</sup> February 2024 in Bujumbura, Burundi. The Director General paid a courtesy visit to the Principal Secretary of the State Department for Ministry of Mining, Blue Economy and Maritime Affairs of Kenya on afternoon 28<sup>th</sup> February 2024. The Director General paid a familiarization visit to the Directorate of Geological Survey at the State Department for Mining in Ministry of Mining, Blue Economy and Maritime Affairs, Kenya. The African Minerals and Geosciences Centre (AMGC) which is holding an International Standard called ISO 9001:2015 certification was hosted a 2-day surveillance audit on the standard from 29<sup>th</sup> February 2024 to 1<sup>st</sup> March 2024.

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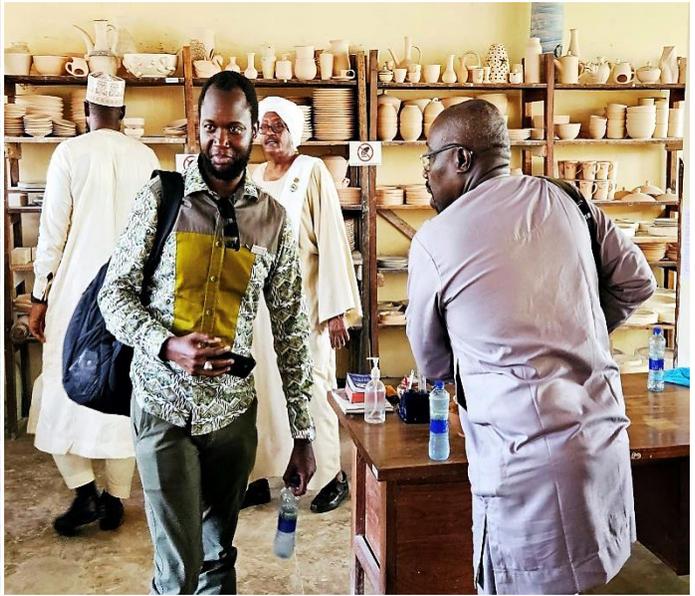




The African Minerals and Geosciences Centre (AMGC) received a UNDP delegation of around 60 persons for an official familiarization visit on the afternoon of Monday 12<sup>th</sup> February 2024. The UNDP delegation comprised staff and counterparts from all the countries participating in the United Nations Global Programme for Development Minerals. The participants were from different countries including Belgium, Ethiopia, Burkina Faso, Cameroon, DRC Congo, Fiji, Guinea, Jamaica, Suriname, Uganda, Zambia, USA, Nigeria, Germany, India, Botswana and Panama. The purpose of the visit was to know the contribution of the AMGC to its member states and Africa in general, as well as on how their countries can also benefit from what AMGC offers regarding mineral services. One of the areas that delegates and partners were interested to learn from AMGC on best practices on Artisanal Small-Scale Mining (ASM), the role of the AMGC, and explore potential areas of collaboration. The delegation was welcomed warmly by the Director General and staff of AMGC and hosted in the Africa Mining Vision (AMV) Hall of African Mineral and Geosciences Centre. The UNDP delegation toured the different technical departments and facilities of AMGC and Mr. Ibrahim Shaddad, the Director General of African Minerals and Geosciences Centre, delivered a holistic PowerPoint presentation entitled:

**AMGC ROLE IN PROVIDING MINERAL SERVICES TO MINING SECTOR & GEOSCIENCE COMMUNITY WITH EMPHASIS ON ARTISANAL SMALL-SCALE MINING (ASM) & DEVELOPMENT MINERALS (DM) IN AFRICA**

The presentation was followed by discussion and further detailed information. It is worth mentioning that Partnership between AMGC and ACP-EU DEVELOPMENT MINERALS PROGRAM was implemented to deliver a series of regional and country level training workshops on geological data digitization techniques, field mapping, resource estimation and database management of DM. The workshops were delivered in 2017/18 through series of workshops consisted of 6 regional training workshops (1 for East Africa, 2 for Anglophone & Francophone West Africa, 1 for Central Africa and 1 for Southern Africa) and 4 country-level training workshops (for Zambia, Guinea-Conakry, Uganda and Cameroon) and 1 for focus countries together.





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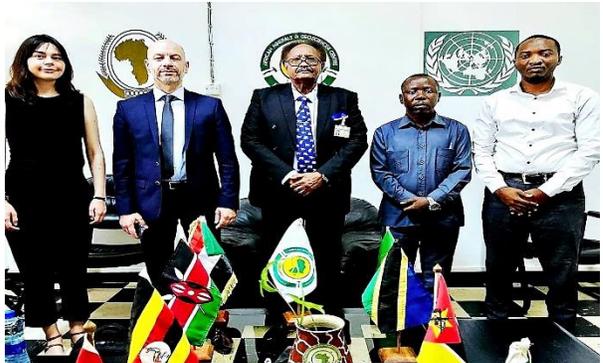
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Galaxy S23



Geoscience for a sustainable Earth  
**brgm**



The Director General of AMGC received and held a meeting with the BRGM, Mr. Eric GOMEZ, Geographic Director–Southern and Eastern Africa of the French Geological Service (BRGM) at the Centre premises in Kunduchi Beach Area, Tanzania on Tuesday February 13<sup>th</sup> 2024. Mr. Eric was accompanied by Mrs. Annie BIRO, head of the economic department of the French Embassy in Dar es Salaam, Tanzania. Mr. Eric was seeking to overview available opportunities, particularly in the field of Critical Raw Materials (CRM) assessment associated with detailed geological mapping. The BRGM is French’s public reference institution for earth science applications for the management of surface and subsurface resources and risks. The African Minerals and Geosciences Centre being a Pan-African Centre of Excellence, its Director General expressed the interest of needs to collaborate with BRGM in the sustainable-responsible development and management of mineral resources of AMGC member states and Africa in general. Further discussions will be initiated on possible partnership through a proposed MoU between AMGC and BRGM for enhancing the Centre’s facilities to contribute in driving the African Mining Industry and joint activities such as research and development, experience sharing, consultancy projects, capacity building as well as promote applied research and development in geoscience fields. Areas of collaboration will be suggested to provide a multidisciplinary phenomenon amongst the expertise and experiences at AMGC and BRGM particularly in Artisanal and Small-Scale Mining (ASM) and Development Minerals application such as ceramic and gemstones. Other areas of collaboration are attachment for AMGC technical staff in BRGM and sabbatical leave programs for BRGM technical staff in AMGC.



Mr. Ibrahim Shaddad, the Director General of AMGC, paid a courtesy visit to H.E. Mr. Asm Mustafa, the Charge d'affairs and Mr. Esam Aldein Abdelrahim, the Counsellor and Administrative Diplomat at the esteemed Sudan Embassy in Dar es Salaam, Tanzania on the Thursday 15<sup>th</sup> February 2024. The Director General updated the two senior diplomats regarding the performance of the Centre from 2015 to 31<sup>st</sup> December 2024 and current challenges facing the Centre. Mr. Shaddad expressed much appreciation, gratitude, and sincere recognition of the outstanding commitments and obligations of the Government of Sudan to the Centre that enable it to implement its activities to its highest peak. The Sudan is the last member state to join the work force of AMGC in August 2010 and since then has been unreserved, supporting the Centre in overcoming repeated financial constraints that the Centre is facing. The Government of Sudan is one of the leading member states of AMGC, fulfilling their financial contributions to the Centre in a timely manner. It is worth mentioning that the Sudan is ranking the second after Tanzania the host country of AMGC in utilizing the AMGC's mineral services and in this regard the Sudan



contributes honorably in the 40% annual operational budget to be generated by the Centre. The Sudan is also leading in injecting additional funds through maximizing its beneficiation from mineral services, particularly paid training courses provided by the Centre. Since Mr. Ibrahim Shaddad, the current Director General of African Minerals and Geosciences Centre came on board on 15<sup>th</sup> July 2015, a total of 486 paid training opportunities were provided to Sudanese professionals from Geological Research Authority of Sudan (GRAS), Sudanese Mineral Resources Company (SMRC), Ariab Mining Company (AMC) and Sudan's Gold Refinery. The Sudanese professionals have been trained in various on-job-training courses at the AMGC premises based in Dar es Salaam, Tanzania, and one paid outreach training course held at the premises of GRAS in Khartoum. H.E. Mr. Asm Mustafa assures the sustainable support of the Sudan to AMGC and expressed his high concern to enhance the existing excellent and fruitful relationship and cooperation that the Sudan and AMGC share for strengthening beneficial partnerships to push for the Centre's mission and mandate in serving the Mining Sector and Geosciences community in the Sudan and African Countries. It is worth mentioning that the Sudan chaired the AMGC 33<sup>th</sup> and 39<sup>th</sup> Governing Council Meetings hosted in Khartoum in 2013 and 2019, respectively.



**The African Minerals and Geosciences Centre (AMGC) through its Industrial Minerals Department has been experienced challenge of handling its works due to frequent breakdown of the kiln elements for a very long time. For a short-term solution, AMGC management decided to import an entire set of elements from South Africa and they arrived at the Centre on 22<sup>th</sup> February 2024 for replacing the old rusty elements. The replacement was done successfully by a local Technician on 23<sup>th</sup> February 2024. The department was able to produce the customers pending orders effectively.**



**PARTICIPATION OF AMGC TEAM LED BY THE DIRECTOR GENERAL IN THE HIGH-LEVEL CONSULTATION MEETING ON THE ANALYTICAL FINGERPRINT (AFP) PROJECT PHASE IMPLEMENTATION IN THE GREAT LAKES REGION HELD ON 26<sup>th</sup> FEBRUARY 2024 IN BUJUMBURA, BURUNDI**

As a follow up to the Analytical Fingerprint planning workshop held in Dar es Salaam, Tanzania from 24<sup>th</sup> to 25<sup>th</sup> May 2023, the Secretariat of International Conference on the Great Lakes Region (ICGLR) invited the African Minerals and Geosciences Centre (AMGC), as partner and host of the AFP analytical laboratory to attend the high-level consultation meeting scheduled for 26<sup>th</sup> February 2024 in Bujumbura, Burundi.

The German Federal Ministry for Economic Cooperation and Development (BMZ) through the German Federal Institute on Geosciences and Natural Resources (BGR) sponsored invitation of AMGC team comprising of: -

1. Mr. Ibrahim Shaddad, the Director General of AMGC.
2. Mr. Charles Buteta, the Quality Manager/Manager of Chemical & Environmental Department.
3. Mr. Bashiri Juma, the Manager of Finance and Administration.

The Executive Secretary of ICGLR has received the Director General of AMGC and held a bilateral meeting regarding the Analytical Fingerprint (AFP) project as a preparation for the post-BGR support on Sunday, 26<sup>th</sup> February 2024 over a dinner in Bujumbura, Burundi. The high-level consultation meeting on 26<sup>th</sup> February 2024 in Bujumbura, Burundi assessed the status of the implementation of the AFP costed activity plan and reviewed the working arrangements of ICGLR with the implementing partner-BGR to accelerate the implementation of the agreed activity plan as requirement before the handover of AFP project activities and its infrastructure to ICGLR. It is worth mentioning that, in May 2023, in the United Republic of Tanzania, the BGR, ICGLR, AMGC, and the AFP Member States (namely, the Republic of Burundi, the Democratic Republic of Congo, the United Republic of Tanzania, and the Republic of Uganda) agreed upon several strategic activities to be implemented during the No Cost extension period 2023 to 2024. Implementing these activities was deemed paramount to any successful project handover. They include the following:



(a) Development and implementation of an AFP Business Plan, which comprehensively outlines the commercialization strategy and sensitization of both the private and public sectors on AFP, including the laboratory, to ensure the sustainability of the project assets and provide a secure flow of resources for the post-BGR project. In the meeting, it was emphasized that establishing commercial sustainability through successfully developing and implementing a business plan was crucial to enable any sustainable handover.

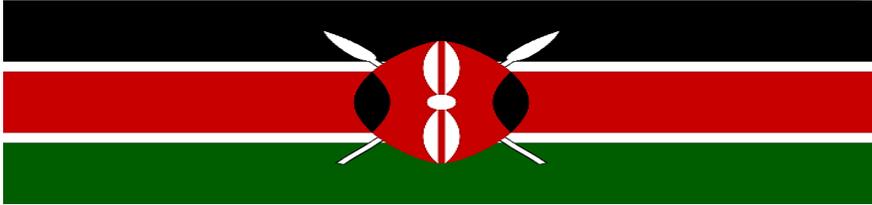
(b) The fast-tracking of capacity-building of Member States and permanently dedicated AMGC personnel on advanced analysis using the LA-ICP-MS would support the full integration of the AFP technology into third-party audits.

(c) Integration of the AFP technology into the ICGLR Third Party Audits as a complementary tool of the regional certification mechanism (RCM) as the ICGLR Third Party Audit Committee approved on 20<sup>th</sup> April 2023.

(d) Conducting technical laboratory equipment audits/inspections to determine fit for purpose and also verify whether the equipment is operational for handover;

(e) All human resources matters are concluded in line with BGR rules and contracts as well as respective Member States employment laws.

(f) Presentation of the comprehensive AFP project Report and AFP handover plan to be submitted to ICGLR decision-making organs for consideration. Furthermore, the High-level session on Analytical Fingerprint (AFP) sustainability held on 08<sup>th</sup> March 2023 renewed the commitment of the BMZ through the BGR to provide technical and financial support for the implementation of the AFP project in Burundi, DRC, Rwanda, Tanzania and Uganda.



On 28<sup>th</sup> February 2024 Mr. Ibrahim Shaddad, the Director General of AMGC, paid a courtesy visit to Mr. Elijah Mwangi, the Principal Secretary (PS) of the State Department for Ministry of Mining, Blue Economy and Maritime Affairs of Kenya. The Director General had a successful meeting with the PS in the capacity of Kenya Chairing the Governing Council of AMGC. The Director General expressed his gratitude and appreciation for Kenya's leadership in updating its financial commitments to AMGC as well as its sustainable support, which enabled the Centre to implement its activities to its highest peak. He further updated the PS regarding performance of the Centre, briefed him regarding current challenges facing the Centre and discussed arrangement of holding coming Policy Organ Meetings of the Centre including the AMGC Governing Council, which will be hosted by Kenya under the chairmanship of H.E. Salim Mvurya, the Cabinet Secretary for Ministry of Mining, Blue Economy & Maritime Affairs of Kenya. The PS confirmed the commitment of Kenya to support AMGC and maximize its beneficiation from mineral services provided by the Centre. It is worth mentioning that Kenya joined the Centre in July 2006 becoming the 7<sup>th</sup> member state, chaired the AMGC Governing Council and hosted the Policy Organ Meetings three times (May 2011, June 2014 and May 2015).



**Mr. Ibrahim Shaddad, the Director General of AMGC paid a familiarization visit to the Directorate of Geological Survey at the State Department for Mining in Ministry of Mining, Blue Economy and Maritime Affairs, Kenya. Mr. Enoch Kipseba, the Representative of Kenya in AMGC Board of Directors/Ag. Director of Directorate of Geological Survey briefed Mr. Shaddad regarding the mandate and mission of the Directorate. The Director General of AMGC had got the opportunity to meet the heads of the departments at the Directorate. The various laboratories of the Directorate undergoing development were visited, and the technical support by AMGC through training and sharing of analytical experience is expected to commence as soon as possible.**



**The African Minerals and Geosciences Centre (AMGC) which is holding an international standard called ISO 9001:2015 certification hosted a 2-days surveillance audit on the standard from 29<sup>th</sup> February 2024 to 1<sup>st</sup> March 2024. The main objective of the audit was to check whether the laboratory service departments of the Centre are complying with the requirements of the Quality Management System for proper customer satisfaction on the services and products provided. This audit was led by Mr. Ramadhan Nyambuka from SGS Tanzania verified the Centre is complying to the requirements. The audit hosted on behalf of the Centre by Mr. Charles Buteta Athuman who is the Quality Manager and Manager of Chemical and Environmental Department.**

# EVENTS

**EXPOGROUP**

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**8<sup>th</sup> MINEXP AFRICA 2024**  
International Mining & Machinery Trade Exhibition  
05 - 07 June 2024  
Kenyatta Int'l, Convention Centre,  
Nairobi, KENYA

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05 - 07 June  
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**08<sup>th</sup> MINEXPO KENYA 2024 - International Trade Exhibition on Mining & Machinery, will be held on 05<sup>th</sup> to 07<sup>th</sup> June 2024, Kenyatta International Convention Centre, Nairobi.**

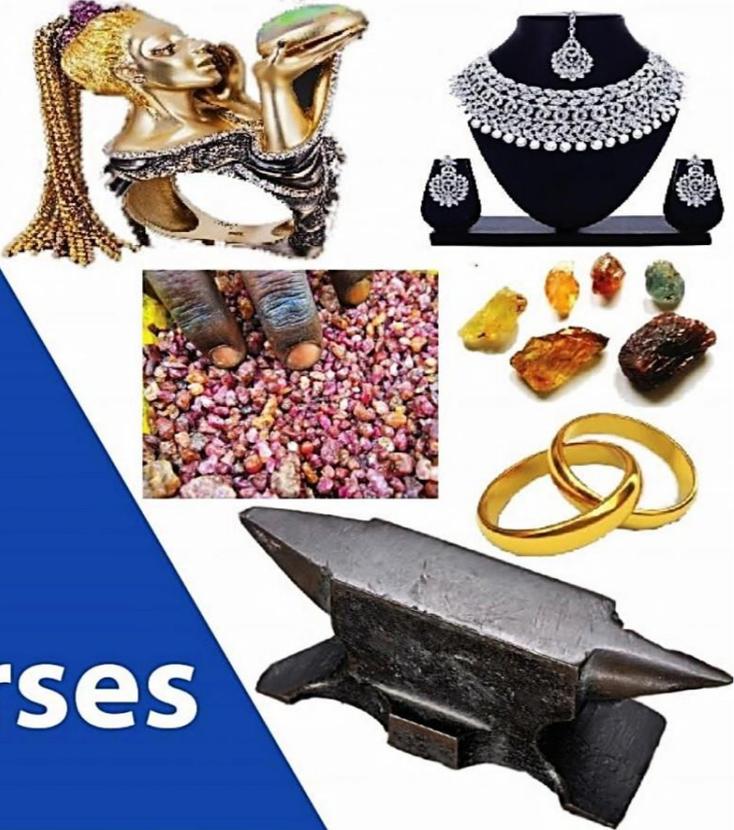
## UPCOMING EVENT:



**08<sup>th</sup> MINEXP AFRICA 2024**  
Int'l. Mining & Machinery Trade Fairs  
25 - 27 September, Dar-es-Salaam, Tanzania

**08<sup>th</sup> MINEXPO TANZANIA 2024 - International Trade Exhibition on Mining & Machinery, Dar es Salaam from 25<sup>th</sup> to 27<sup>th</sup> September 2024.**

# New Courses

# AMGC

# New Courses

The Mineralogy, Petrology and Gemology Department is happy to announce the following new training courses

1

Gemstone/Mineral Estimation and Valuation

2

Jewellery Design

3

Gemstone Exploration & Gem Safari's

[www.seamic.org](http://www.seamic.org)

More Info  
[matokeo@seamic.org](mailto:matokeo@seamic.org)



## NEW Training Courses

**African Minerals and Geosciences Centre (AMGC)** is pleased to announce the introduction of four new courses Geostatistics, Petroleum Sciences and Resource Estimation in collaboration with Khartoum based Consulting firm called **Knowledge and Training Centre (KTC)**. The course shall be facilitated by the Director of KTC, Dr. M. Zayed Awad, an eminent specialist in the areas of Geostatistics, resource evaluation, stratigraphy, reporting, training and mentoring, risk and decision analysis, petroleum economics, project management. The training course will be organized in Dar es Salaam at the AMGC training facilities. The following training courses are going to be offered through this collaboration.

### 1. Fundamental of Petroleum Economics

**Duration:** One Week

**Course fee:** US\$ 1,200

This course introduces the participants to requirements for conducting petroleum economics; different stages of the petroleum industry life cycle involving upstream, mid-stream and downstream sectors will be explained. Participants will learn how to construct a Cash Flow Model for oil and gas investment decision. They will also learn how to deal with the different financial components of petroleum cost, and classification of costs into OPEX and CAPEX. Net Cash Flow Stream analysis and computation of economic indicators (Yardsticks) such as NPV, IRR, PBP, MCE and DPI, and their interpretations are essential for petroleum investment decision-making. Cash Flow Adjustment using discount rates is also considered. Types of fiscal regimes will be explained, participant will also learn how to incorporate the fiscal parameters into a cash flow stream.

### 2. Geostatistical Mineral Resource Estimation

**Duration:** One Week

**Course fee:** US\$ 1,700

The course will focus on the fundamentals of Geostatistical application in mining that are required for domain specification that are required for mineral resource estimation and will include hands-on training with Geostatistical software. Geostatistical conditional Simulations may be used to assess the uncertainty associated with the Reserves Evaluation at exploration, feasibility, and production stages. The simulations provide a range of potential reserves for the ore body's Tonnage, Metal Quantity and Recovered Grade.



### 3. Introduction to Oil and Gas Industry

**DURATION:** One Week

**Course fee:** US\$ 1,200

This course is designed for a wide-ranging of petroleum industry personnel. It is designed to provide green-hands technical, and non-technical personnel with practical petroleum industry life cycle. The course covers the key phases of the exploration, development and production industry as well as transportation and refining of crudes oils.

### 4. Geostatistics for Mining - foundation Course

**Duration:** Two Weeks

**Course fee:** US\$ 2,000

Geostatistics, in combination with other statistical methods, offers a wide range of mathematical tools that can be used to analyze, model, provide estimates and assess uncertainties, for different types of spatial phenomena, for example, grades or geological features. The course will focus on the fundamentals of Geostatistics and statistics and will include hands-on training with Geostatistical software.

#### THE INSTRUCTOR



**Dr. M. Zayed Awad**, the former Sudanese Minister for Oil and Gas (September 2014-May 2017) BSc (Hons) from University of Khartoum, Sudan, MSc (Geol) from Technical University of Berlin (TU), PhD (Stratigraphy) from Technical University of Berlin (TU). Dr. Zayed is a university instructor with postgraduate qualifications in petroleum geology, stratigraphy, economic geology, Geostatistics, and relevant application soft wares. He has more than 35 years' experience in university teaching and more than 25 years worldwide experience in

the petroleum industry and training. He has supervised many MSc and PhD research students and reviewed several reports and research papers. He is the founder of Knowledge & Training Center (KTC) in Sudan, and he is active as a trainer since 2003. He worked on many projects and given training courses to hundreds of attendees on many aspects of geology. Dr. Zayed's skills are in Geostatistics, resource evaluation, stratigraphy, reporting, training and mentoring, risk and decision analysis, petroleum economics, project management. Dr. Zayed was the initiator and editor-in-Chief of the book titled "Petroleum Geology and Resources of the Sudan" published by Geozone (Berlin) in 2015.



## LIST OF TRAINING COURSES

Training Topics	Duration	Fee
<b>Finance and Administration Department (FAD)</b>		
<b>Leadership and Management Skills</b>	2 Weeks	\$1,500
<b>Financial Management Skills</b>	2 Weeks	\$1,500
<b>Executive Secretarial Skills</b>	2 Weeks	\$1,500
<b>Chemical and Environmental Department (CED)</b>		
<b>Spectrometric Methods of Analysis.</b>	2 Weeks	\$800
<b>Analysis of Gold and Other Base Metals</b>	2 Weeks	\$800
<b>Modern Laboratory Management Method</b>	2 Weeks	\$1,500
<b>Quality Management Section (QM)</b>		
<b>Laboratory Certification and Accreditation</b>	2 Weeks	\$1,500
<b>Modern Laboratory Management Methods</b>	2 Weeks	\$1,500
<b>Quality Control and Quality Assurance in Laboratories</b>	2 Weeks	\$1,500
<b>Laboratory Safety and Security</b>	2 Weeks	\$1,500
<b>Mineralogy, Petrology and Gemology Department (MPGD)</b>		
<b>Mineralogical and Petrological Sample Preparation and Analytical Techniques</b>	2 Weeks	\$800
<b>Gemstone Identification Techniques</b>	1 Week	\$400
<b>Gemstone Value Addition Techniques</b>	2 Weeks	\$800
<b>Usage of Benchtop X-ray Diffraction (XRD)</b>	2 Weeks	\$800
<b>Gemstone formation, mode of occurrences and mining methods</b>	2 Weeks	\$800
<b>Industrial Minerals Application Department (IMAD)</b>		
<b>Pottery for Beginners</b>	2 Weeks	\$800
<b>Mould Making</b>	2 Weeks	\$800
<b>Forming Techniques</b>	2 Weeks	\$800
<b>Decorations in Pottery and Ceramics</b>	2 Weeks	\$800
<b>Bricks &amp; Tiles Manufacturing [Clays]</b>	2 Weeks	\$800
<b>Glaze Formulation</b>	2 Weeks	\$800
<b>Body Composition Formulation</b>	2 Weeks	\$800



<b>Mineral Processing and Small-scale Mining Department (MPSSMD)</b>		
<b>Practical Mineral Processing and The Basic Mineral Processing Flowsheet</b>	2 Weeks	\$800
<b>Sampling and Sample Preparation for Laboratory Testing</b>	2 Weeks	\$800
<b>Artisanal and Small-Scale Mining Activities</b>	2 Weeks	\$800
<b>Techniques of Gold Cyanidation</b>	1 Week	\$800
<b>Mineral Economics</b>	2 Weeks	\$800
<b>Metallurgical Balance and Process Evaluation</b>	2 Weeks	\$800
<b>Extractive Metallurgy – Metallic Ore Deposits, Metal Extraction and Purification Processes</b>	2 Weeks	\$800
<b>Environmental Management in Mining</b>	1 Week	\$400
<b>Geo-information Department (GID)</b>		
<b>GIS and Remote Sensing for Mineral Exploration and Geological Mapping</b>	2 weeks	\$800
<b>Best Practices in Mineral Resource Estimation</b>	1 week	\$400
<b>Geodatabase Development for Web mapping</b>	2 weeks	\$800
<b>GIS and Remote Sensing Application for Geohazards</b>	1 week	\$400
<b>Integrated Mineral Exploration Techniques</b>	2 weeks	\$800
<b>GIS and Remote Sensing for Hydrological Applications</b>	1 week	\$400
<b>Open-Source GIS</b>	2 weeks	\$800
<b>Geochemical Exploration and Mapping</b>	2 weeks	\$1,200
<b>Structural Geology and Geotectonics in Mineral Exploration</b>	2 weeks	\$1,200
<b>Fundamental of Petroleum Economics</b>	1 week	\$1,200
<b>Geostatistical Mineral Resource Estimation</b>	1 week	\$1,700
<b>Introduction to Oil and Gas Industry</b>	1 week	\$1,200
<b>Geostatistics for Mining - foundation Course</b>	2 weeks	\$2,000
<b>Prospect Evaluation: Volumetric and Risk Analysis</b>	2 weeks	\$2,000



## African Minerals and Geosciences Centre (AMGC)

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*Minerals for  
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[www.seamic.org](http://www.seamic.org)



## MINERALOGY, PETROLOGY AND GEMMOLOGY SERVICES

The Mineralogy, Petrology and Gemmology Department utilizes the skills of its staff to address crucial issues in the mineral sector such as lack of technical knowledge on mineral testing and identification, evaluation, grading and value addition techniques.

### EXPERTISE

- ✓ Mineralogical and petrological sample preparation and analysis
- ✓ Mineralogical evaluation of industrial minerals, ore minerals and clays
- ✓ Gemstone identification and grading
- ✓ Specialized training in Gemmology, Gemstone Cutting and Polishing and Mineralogical and Petrological Sample preparation and Analytical Techniques.



Petrography and Gemmological Microscopes

### ANALYTICAL SERVICES

- ✓ Preparation of standard thin sections and polished sections
- ✓ Rock slabbing and polishing
- ✓ Rock core splitting
- ✓ Petrographic examination of thin sections and polished sections
- ✓ Evaluation of industrial minerals, ore minerals and clays
- ✓ Gemstone testing and identification
- ✓ Diamond grading
- ✓ Consultation and Expert opinion



Polishing Machine for Polished Mineral Preparation

### TRAINING SERVICES

- ✓ Mineralogical and petrological sample preparation and analytical techniques
- ✓ Gemstone Characterization, Identification and Value Addition
- ✓ Gemstone Identification Techniques
- ✓ Gemstone Value Addition Techniques (Gem Cutting)
- ✓ Gemstone Cabochon making and Carving
- ✓ Gemstone Faceting
- ✓ Gemstone Identification, Value Addition and Trading



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