AMGC News

Director General's Message

During the month of August, the Centre organized two classroom training courses for the first time since the outbreak of COVID 19 pandemic. Two training courses, namely: Sampling and Sample Preparation for Laboratory Testing and Gem Identification Techniques were carried out by Mineral Processing and Small-scale Mining, and Mineralogy Petrology and Gemmology Departments respectively, attended by trainees from Tanzania. Travel restrictions and the prevailing situations about COVID 19 is expected to affect the training courses for participants from other countries, for some time.

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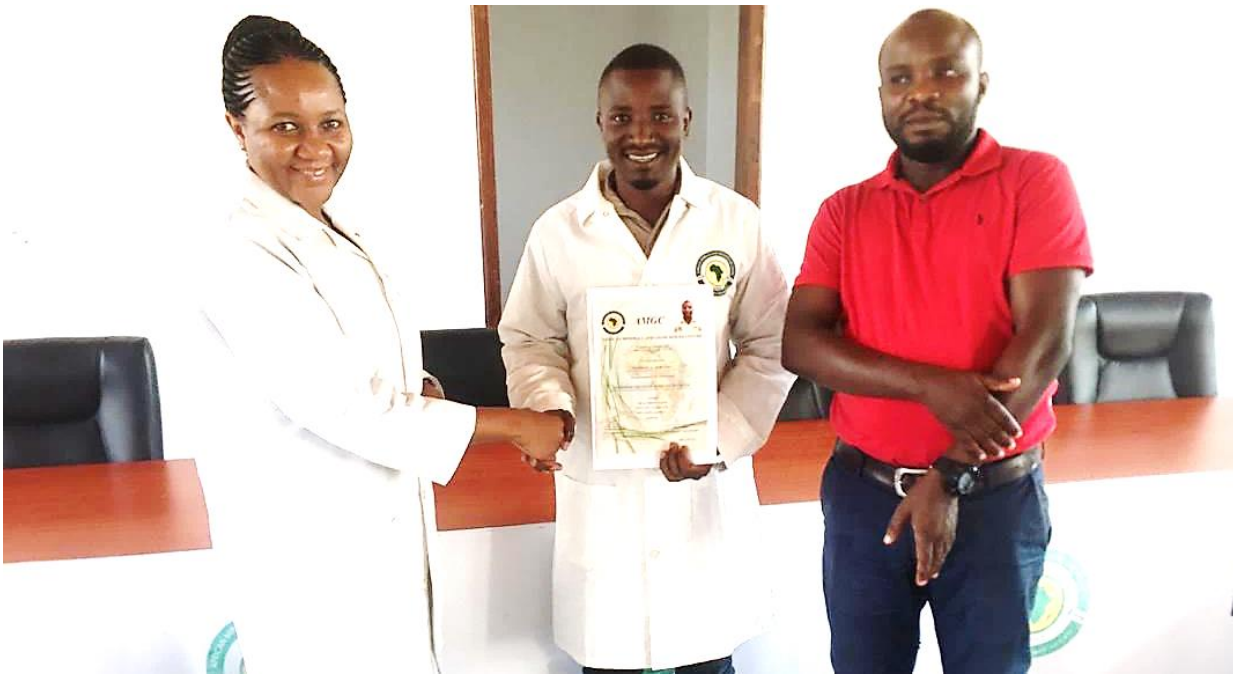
Training on Sampling and Sample Preparation for Laboratory Testing

The Minerals Processing & Small-Scale Mining Department (MPSSM) of the African Minerals & Geosciences Centre (AMGC) conducted a training course on "Sampling and Sample Preparation for Laboratory Testing" from 03 to 14 August 2020. It was attended by Mr. Timothy Banyika Bujiba and Mr. Sijaona Mashinyali Balele all from Nesch Mintec Laboratory in Mwanza, Tanzania and Miss Aneth Mushumbushi as part of her apprentice program.

Training on Gem Identification Techniques



Certificate handing over Ceremony for Mr Samwel Kirindo, Metallurgy Engineer from Mintec laboratory, Mwanza Tanzania who attended a course on GEM IDENTIFICATION TECHNIQUES conducted from 3rd to 7th August 2020 at AMGC Dar Es salaam Tanzania In addition, the visit had the aim of establishing the MoU between the two Institutes for the mutual benefits of both parties.

Congratulatory Message

The African Minerals and Geosciences Centre (AMGC), has the honour to congratulate H.E. Mr. Takele Uma for being appointed a new Minister of Mines and Petroleum of Federal Democratic Republic of Ethiopia.

Appreciation Message

The African Minerals and Geosciences Centre (AMGC), wishes to take this opportunity to thank H.E. Dr. Samuel Urkato for his tenure as the Minister of Mines and Petroleum of the Federal Democratic Republic of Ethiopia.

Appreciation Message

The African Minerals and Geosciences Centre (AMGC) wishes to take this opportunity to thank Mr. Zachary Baguma Mosimoson Atwoki, the former Ag. Director of Directorate of Geological Survey and Mines Ministry of Energy & Mineral Development, Uganda. AMGC recognizes his support which enabled the Centre to keep good working relationship with Uganda.

EREX International Technical Training for Geologists, Geophysicists, Petroleum Engineers (HEALTH & SAFETY PRECAUTIONS)

Course and Instructor	Date	Location	Fees USD
• Completion and WorkOver Operations.	November 8-12, 2020	Cairo-Hurghada	**1450**
Ismael Mahgoub, P.Eng. (Ph.D)			
• Advanced Rock Physics to	November 22-26, 2020	Cairo-Hurghada	**1450**
Support Quantitative Seismic Interpretation.			
Ahmed Abdel Karim (Ph.D)			
• FIELD SEMINAR	December 6-10, 2020	Hurghada-Quseir	**1650**
Southern Gulf of Suez & Northern Red Sea Petroleum System			
M. Darwish (Ph.D)			

(HEALTH & SAFETY PRECAUTIONS)

Course and Instructor	Date	Location	Fees USD
Application of Structure Geology in Seismic Interpretation	January 24 - 28, 2021	Cairo-Hurghada	**1450**
Saleh Hammed (Ph.D)			
• Charachterization & Geometry of Deltaic and Shallow Marine Reservoirs.	Jan. 31-February 4,2021	Cairo-Hurghada	**1450**
M. Darwish (Ph.D)			
• Downhole Remediation Practices for Mature (Brown) Oil & Gas Wells	February 21- 25, 2021	Cairo-Hurghada	**1500**
Adel S. Ragab, P.Eng. (Ph.D)			
3D Seismic Attributes For Exploration & Seismic Reservoir Characterization	March 7 - 11, 2021	Cairo-Hurghada	**1850**
José (PEPE) Regueiro, (Ph.D)			
• Integration of Petrophysics and Core analysis	March 21 - 25, 2021	Cairo-Hurghada	**1450**
Ahmed Abdel Karim (Ph.D)			
• Economic Feasibility Analysis of Upstream Petroleum Projects Workshop	May 23 – 27, 2021	Cairo-Hurghada	**1500**
Ismael Mahgoub, P.Eng. (Ph.D)			
• Advanced Practices in Exploration & Production of Unconventional Resources.	January 10 - 14, 2021	Cairo-Hurghada	**1450**
Ahmed Abdel Fattah (Ph.D)			
PLEASE BOOK EARLY TO AVOID COURSE CANCELLATION			

For Course Details, Please visit "www.erexegypt.com" For Further Information, Please contact:

EREX:

E-mail: ntewfik@erexegypt.com; btawfik@erexegypt.com

Tel: (202) 25253989, 25254935, 25254013; Fax: (202) 25254277

AMGC LIST OF TRAINING COURSES – 2020/21
ONLINE TRAININGS

Geo-information Services				
Training Topics	**Description**	**Duration**	**Tentative Schedule**	**Fee**
GIS and Remote Sensing for Mineral Exploration and Geological Mapping	Geological interpretation of satellite images, to enabling the participant to relate the geological structure and lithology with their geomorphological manifestation. Fundamentals of remote sensing including principles of electromagnetic radiation is needed. Various band combination, band ratios and enhancements techniques for visual interpretation and feature extraction by quantitative methods will be deployed to aid in lithology, structures and hydrothermal alteration zones delineation. The project work will use various types of remote sensing data products over different types of terrain, aims at providing high level of confidence to individual trainee to carry out their assignments in the elated fields in their respective countries.	2 weeks	On request	$800
Data Integration and Mineral Targeting	GIS-based spatial data processing, analysis, visualization, and decision-making. The course includes exercises and case studies with the view to develop skills in data capture, data integration, digital mapping, raster and vector geoprocessing, spatial analysis and modeling, and use of GIS as a data management and decision-making tool in earth science. Use of GIS in site suitability analysis and Mineral Prospectivity Mapping using Boolean, Index Overlay, and Fuzzy Logic overlays	2 weeks	On request	$800
Geostatistics Application in Geology	Practical experience of using the statistical environment and packages in **R** for exploratory analysis variogram estimation and modelling and optimal estimation of sample values at unsampled sites using kriging.	2 weeks	On request	$800

Training Topics	Description	Duration	Tentative Schedule	Fee
Mineral Exploration and Resource/Reserve Estimation	Introduction to Exploration, Evaluation and Extraction (Mining) of mineral resources. Mineral Exploration Methods, reconnaissance survey, Geological Mapping, Geochemical survey and Geophysical survey. Data integration, analysis and interpretation of results for target areas identification. Resource/reserve estimation with data collection and handling, data quality, data handling and data validation, and data analysis and interpretation. Statistical methods of resource/reserve estimation, generate block model, block size selection, coding block model and block model parameters. Estimation concepts, estimations techniques, grade calculation and model validations. Mineral resource classifications and Reporting. Reporting code, sign off, external auditing and case study.	2 weeks	On request	$1,500
Advanced Resource Estimation	This course takes a practical approach **for real-life data set** to training you how and when to apply use linear estimation techniques like **Simple Kriging (SK)** and **Co-Kriging (CK).** Non-linear estimation techniques such as **Multiple Indicator Kriging (MIK)** and **Conditional Simulations (Sequential Gaussian Simulation (SGS) and Sequential Indicator Simulation (SIS))**. Participants will produce resource estimates using these techniques and compare and discuss the results.	1 week	On request	$1,000
Web mapping	Preparation of maps for presentation and display on internet. This include designing of web interface, codding and preparation of web maps, web mapping standards, and setting up of web and mapping servers. Different web mapping services: WMS, WFS, WCS using open source mapping applications.	2 weeks	On request	$800

Training Topics	Description	Duration	Tentative Schedule	Fee
Open Source GIS	The widely used GIS applications are proprietary software packages which are very expensive. Due to this a number of Open Source and Free GIS applications have been developed. Some of these applications have grown to be strong and has ability to perform the applications the commercial software are able to do and provide solutions for most of GIS related problems. QGIS and gvSIG are among the Open source and free GIS applications available. This course will enable the trainee to easily acquire and use these applications of GIS.	2 weeks	On request	$800
Geohazards	Natural hazards related to earth phenomenon are intrinsically related with geosciences. Study of these geoscience phenomena is a path to the mitigation and prevention of the hazardous events on our environment. This course details the causes of geohazards, and possible prevention mechanism.	1 week	On request	$400
Quality Management				
Laboratory Certification and Accreditation	Overview on the Certification for ISO 9001:2015 on Quality Management System and Accreditation for ISO/IEC 17025:2017 Standard on Testing and Calibration Laboratories.	2 weeks	On request	$1,500
Modern Laboratory Management Methods	Techniques for managing laboratories. Quality performance and compliance issues, Digital management of quality control using Laboratory Information Management System (LIMS) and validation of analytical methods.	2 weeks	On request	$800

Training Topics	Description	Duration	Tentative Schedule	Fee
Quality Control and Quality Assurance in Laboratories	Overview on Quality Control (QC) and Quality Assurance (QA), Compliance for quality improvement, Laboratory risk management and Laboratory Quality Management System (LQMS).	2 weeks	On request	$1,500
Mineral Processing and Small-scale Mining Services				
Practical Mineral Processing and The Basic Mineral Processing Flowsheet	The course covers fundamental principles and terminology with broad overview of current technical and operating issues and circuit design considerations. Topics covered include; introduction to mineral processing, comminution and liberation, classification; mineral concentration methods (gravity, flotation and magnetic); and solid/liquid separation.	2 Weeks	On request	$800
Environmental Management in Mining	The negative impacts which could arise from the exploration, operation and decommissioning phase of any mining project small, medium or large scale. It covers topics related to Water Management, Land and biodiversity Management, Waste Management and Air pollution.	1 Week	On request	$400

ONSITE TRAINING COURSES

Training Topics	Description	Duration	Tentative Schedule	Fee
Chemical and Environmental Services				
Spectrometric Methods of Analysis.	Theory, operation and maintenance Atomic Absorption Spectrometers (AAS) and X-Ray Fluorescence (XRF).	2 Weeks	13-24 Jul 2020 12-23 Oct 2020 09-20 Nov 2020 18-29 Jan 2021 15-26 Mar 2021 10-21 May 2021	$800
Analysis of Gold and Other Base Metals	Analysis gold and other base metals with a view to wet and dry techniques.	2 Weeks	10-21 Aug 2020 14-25 Sep 2020 7-18 Dec 2020 8-19 Feb 2021 12-23 Apr 2021 14-25 Jun 2021	$800
Quality Management				
Laboratory Certification and Accreditation	Overview on the Certification for ISO 9001:2015 on Quality Management System and Accreditation for ISO/IEC 17025:2017 Standard on Testing and Calibration Laboratories.	2 weeks	16-27 Nov 2020 15-26 Feb 2021	$1,500
Modern Laboratory Management Methods	Techniques for managing laboratories. Quality performance and compliance issues, Digital management of quality control using Laboratory Information Management System (LIMS) and validation of analytical methods.	2 weeks	17-28 Aug 2020 18-29 Jan 2021 05-16 Apr 2021	$800
Quality Control and Quality Assurance in Laboratories	Overview on Quality Control (QC) and Quality Assurance (QA), Compliance for quality improvement, Laboratory risk management and Laboratory Quality Management System (LQMS).	2 weeks	14-25 Sep 2020 15-26 Mar 2021 03-14 May 2021	$1,500
Mineralogy, Petrology and Gemmology Services				
Mineralogical and Petrological Sample Preparation and Analytical Techniques	Thin section preparation, Polished section preparation, Petrographic examination	2 Weeks	13-24 Jul 2020 5-16 Oct 2020 11-22 Jan 2021 5-16 Apr 2021	$800
Gemstone Identification Techniques	Physical and optical properties of gemstones, working principles of gemmological tools and equipment, Testing and identification of gemstones, Treatments, Quality grading, Synthetic stones	1 Week	3-7 Aug 2020 26-30 Oct 2020 1-5 Feb 2021 26-30 Apr 2021	$400

Training Topics	Description	Duration	Tentative Schedule	Fee
Gemstone Value Addition Techniques	Rough gemstone sorting and grading, different techniques for gemstone cutting (faceting, cabbing and free form carving), evaluation of cut stones	2 Weeks	10-21 Aug 2020 2-13 Nov 2020 8-19 Feb 2021 3-14 May 2021	$800
Industrial Minerals Application Services				
Pottery for Beginners	Introduction to pottery and ceramics, Classification of pottery and ceramic products, Raw materials used, Identification of raw materials, Raw materials preparation and basic forming methods	2 Weeks	13-24 Jul 2020 10-21 May 2020	$800
Mould Making	Material used for modelling and mould making, Preparation of plaster of Paris, Shrinkage calculations and drawings enlargement, Model making, Mother mould making, Case mould making,	2 Weeks	10-21 Aug 2020	$800
Forming Techniques	Hand building, Coiling, Slip casting-deflocculants, Solid and hollow casting, Thixotropy, Jigger & Jollying, Pressing, Throwing	2 Weeks	21 Sep - 2 Oct 2020	$800
Decorations in Pottery and Ceramics	Understanding ceramic oxides, Colour blending and firing temperature, types of decorations – inlaying, sigraffito, stenciling, Glazing, Decor transfer, Engobe preparations	2 Weeks	9-20 Nov 2020	$800
Bricks & Tiles Manufacturing [Clays]	Introduction to bricks and tiles, raw materials, preparation, forming, drying and firing by using simple methods	2 Weeks	1-12 Feb 2021	$800
Glaze Formulation	Introduction to glaze, Glaze components – oxides, alumina & fluxes, What determines glaze firing temperature, Selection of raw materials for glaze, Glazing rules and techniques, Glaze defects and remedies	2 Weeks	1-12 Mar 2020	$800
Body Composition Formulation	Single raw material test, shrinkage test, Porosity test, the function of alumina and fluxes in the body, Triaxial blending	2 Weeks	12-23Apr 2021	$800

Mineral Processing and Small-scale Mining Services				
Training Topics	**Description**	**Duration**	**Tentative Schedule**	**Fee**
Practical Mineral Processing and The Basic Mineral Processing Flowsheet	The course covers fundamental principles and terminology with broad overview of current technical and operating issues and circuit design considerations. Topics covered include; introduction to mineral processing, comminution and liberation, classification; mineral concentration methods (gravity, flotation and magnetic); and solid/liquid separation.	2 Weeks	13-24 July 2020 7-18 Dec 2020	$800
Sampling and Sample Preparation for Laboratory Testing	Sampling, sample preparation and analysis of environmental and geological samples. It provides an understanding of the sampling theory, types of sampling and sampling protocols, involved analytical measurement, composition and classification; sampling quality control; and assays methods	2 Week	03-14 Aug 2020 11-22 Jan 2021	$800
Artisanal and Small Scale Mining Activities	To provide ASM operators with technical, management and environmental knowledge for sound improvement of their activities. Particular emphasis is on importance of application of improved technics and use of geological data of deposits in environmentally friendly ways for sustainable ASM Activities. Impacts of ASM like mercury pollution, cyanide pollution, direct dumping of tailings and effluents into rivers, threats from improperly constructed tailings dams, river damage in alluvial areas, erosion damage and deforestation, and landscape destruction.	2 Weeks	31 Aug -11 Sep 2020 01-12 Feb 2021	$800
Techniques of Gold Cyanidation	Detailed accounting of the usage of cyanide for extraction and recovery of gold, and of cyanide toxicity and chemistry. It covers cyanide leaching techniques and gold purification and recovery from solution methods.	1 Week	21-25 Sep 2020 22-26 Feb 2021 24-28 May 2021	$400
Mineral Economics	Fundamental aspects of the evaluation of mineral investments from examining the mining stages with particular emphasis on cash flow models and project acceptance and rejection criteria. This course also examines the basic approaches and methods of developing evaluations for mineral projects and techniques for risk assessment.	2 Weeks	12-23 Oct 2020 22 Mar – 02 Apr 2021	$800

Training Topics	Description	Duration	Tentative Schedule	Fee
Metallurgical Balance and Process Evaluation	The distribution of the various products of a concentrator, and the values contained in them. It provides a basis for decisions making about the mineral processing operations since the values of recovery and grade obtained from the accounting procedure are indications of process efficiency	2 Weeks	02-13 Nov 2020 12-23 Apr 2021	$800
Extractive Metallurgy – Metallic Ore Deposits, Metal Extraction and Purification Processes	The course deals with ores as raw material and metals as finished products. It covers the introduction to metallurgy, occurrences and properties of metallic ores, uses and commercial classification of metals, metal production and recycling	2 Weeks	03-14 May 2021	$800
Environmental Management in Mining	The negative impacts which could arise from the exploration, operation and decommissioning phase of any mining project small, medium or large scale. It covers topics related to Water Management, Land and biodiversity Management, Waste Management and Air pollution.	1 Week	23-27 Nov 2020 07-11 Jun 2021	$400
Geo-information Services				
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Geostatistics Application in Geology	Practical experience of using the statistical environment and packages in **R** for exploratory analysis variogram estimation and modelling and optimal estimation of sample values at unsampled sites using kriging.	2 weeks	5-16 Oct 2020 19-30 Apr 2021	$800

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Advanced Resource Estimation	This course takes a practical approach **for real-life data set** to training you how and when to apply use linear estimation techniques like **Simple Kriging (SK)** and **Co-Kriging (CK).** Non-linear estimation techniques such as **Multiple Indicator Kriging (MIK)** and **Conditional Simulations (Sequential Gaussian Simulation (SGS) and Sequential Indicator Simulation (SIS))**. Participants will produce resource estimates using these techniques and compare and discuss the results.	1 week	14-18 Sep 2020 16-20 Nov 2020 25-29 Jan 2021 15-19 Mar 2021 17-21 May 2021	$1,000

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Web mapping	Preparation of maps for presentation and display on internet. This include designing of web interface, codding and preparation of web maps, web mapping standards, and setting up of web and mapping servers. Different web mapping services: WMS, WFS, WCS using open source mapping applications.	2 weeks	19-30 Oct 2020 5-16 Apr 2021	$800
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Open Source GIS	The widely used GIS applications are proprietary software packages which are very expensive. Due to this a number of Open Source and Free GIS applications have been developed. Some of these applications have grown to be strong and has ability to perform the applications the commercial software are able to do and provide solutions for most of GIS related problems. QGIS and gvSIG are among the Open source and free GIS applications available. This course will enable the trainee to easily acquire and use these applications of GIS.	2 weeks	6-18 Dec 2020 31 May - 11 Jun 2021	$800
Image Processing using ERDAS Imagine	In order properly use earth observation images it is important to have accurate geographical referencing and also to have images that display information that can be interpreted based on sound theory of reflectance. On completion of the course the successful student will: • understand the general image processing principles • be proficient in the use of ERDAS Imagine • understand and be able to undertake geometric referencing of images • understand and be able to display image composites for known purposes. • know about the potential and procedures for image processing in a range of application areas: mineral exploration, land use, environmental protection, geohazard and others	2 weeks	1-12 Feb 2021 14-25 Jun 2021	$800
Geoheritage sites of Tanzania	The importance of Geoheritage and its geoscience significance is discussed in this geo-tourism event which describes the different geohertitage sites and geoparks available in Tanzania: the highest peak of Africa (the Kilimanjaro Mountain), The world only carbonatite volcano (Oldonyo Lengai), The cradle of mankind (Olduvai Gorge), and others. The even includes visit to these and other sites with scientific and touristic interaction.	Duration and cost vary on the number of sites to be visited.		
Geo-safari – Geo-traverse across the Pan-African terrains: Tanzanian Craton, Greenstone belt, East African Rift Valley, the Kibaran and Mozambique belts.		Duration and cost vary according to the selected geo-safari type.		

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Minerals for Development

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40th ANNIVERSARY 1977 - 2017

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 Mount 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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