



A) Course: Precious Stones Light Mining (Focus On Gold and Diamonds)

- **Duration:** 6 months.
- **Level:** Advanced Certificate
- **Credits:** To be determined based on the content of each module.

B) Module Details

Module Code	Module Name	Study Hours	Credits
PSM-101	Introduction to Precious Stones Mining	40	4
PSM-102	Geological Survey and Prospecting	50	5
PSM-103	Mining Techniques for Gold and Diamonds	60	6
PSM-104	Environmental Impact Assessment	45	4.5
PSM-105	Processing and Refining Techniques	55	5.5
PSM-106	Safety and Regulations in Mining	50	5
PSM-107	Gemology and Stone Identification	40	4
PSM-108	Marketing and Trade of Precious Stones	55	5.5
PSM-109	Community Relations and Ethical Mining	30	3
PSM-110	Practicum and Internship	-	12

C) Main Aims and Objectives

1. To provide comprehensive knowledge of precious stones mining.
2. To develop skills in geological survey and prospecting.
3. To teach effective mining techniques for gold and diamonds.
4. To promote environmental impact assessment and sustainable mining.
5. To impart processing and refining techniques for precious stones.
6. To ensure safety and adherence to regulations in mining operations.
7. To provide expertise in gemology and stone identification.
8. To teach marketing and trade strategies for precious stones.
9. To emphasize community relations and ethical mining practices.
10. To offer hands-on experience through practicum and internship.

D) Detailed Outline of The Syllabus Per Module

1. **PSM-101: Introduction to Precious Stones Mining**
 - Overview of Precious Stones Mining Industry
 - Historical Significance
 - Types of Precious Stones
 - Global Market Trends

2. **PSM-102: Geological Survey and Prospecting**
 - Basics of Geology
 - Methods of Prospecting
 - Identification of Potential Deposits
 - Remote Sensing and GIS in Mining

3. **PSM-103: Mining Techniques for Gold and Diamonds**
 - Open-pit Mining
 - Underground Mining
 - Alluvial Mining
 - Marine Mining Techniques

4. **PSM-104: Environmental Impact Assessment**
 - EIA Procedures in Mining
 - Mitigation of Environmental Impact
 - Biodiversity Conservation
 - Sustainable Mining Practices

5. **PSM-105: Processing and Refining Techniques**
 - Crushing and Milling
 - Gravity Separation
 - Chemical and Electrostatic Processes
 - Refining Processes for Gold and Diamonds

6. **PSM-106: Safety and Regulations in Mining**
 - Occupational Health and Safety
 - Mining Regulations and Compliance
 - Emergency Response Planning
 - Risk Assessment in Mining

7. **PSM-107: Gemology and Stone Identification**
 - Introduction to Gemology
 - Identification of Precious Stones
 - Grading and Certification
 - Market Value Determination

8. **PSM-108: Marketing and Trade of Precious Stones**
 - Global Precious Stones Market
 - Marketing Strategies for Mining Companies
 - Gemstone Certification and Trade Regulations
 - Online and Auction Marketing

9. **PSM-109: Community Relations and Ethical Mining**
 - Stakeholder Engagement
 - Social Responsibility in Mining
 - Ethical Mining Practices
 - Conflict Resolution in Mining Communities

10. **PSM-110: Practicals and Internship**
 - Mining Operations Observation
 - Hands-on Techniques in Precious Stones Processing
 - Interaction with Industry Professionals
 - Practical Application of Safety and Environmental Practices

E) Practicals

Practical activities will be incorporated into modules where applicable, focusing on hands-on experiences such as:

- Geological survey and prospecting fieldwork.
- Observations in different mining operations.
- Processing and refining techniques in a controlled environment.
- Gemstone identification and grading exercises.

F) Duties During Internship

During the 8-week industrial internship, students will:

- Work in an operational mining environment.
- Apply mining and processing techniques learned in class.
- Engage in safety compliance and environmental practices.
- Participate in community relations initiatives.

G) Country Benefits

1. Economic growth through the mining sector.
2. Increased revenue from precious stones exports.
3. Job creation in the mining industry.
4. Enhancement of international trade relationships.
5. Strengthening of the national gemstone industry.
6. Attraction of foreign investments in mining projects.
7. Improved infrastructure development in mining regions.
8. Contribution to the country's foreign exchange reserves.
9. Potential for tourism growth related to gemstone attractions.
10. Positive impact on the overall economic development.

H) Students' Entrepreneurship Benefits

1. Ability to establish and manage a precious stones mining venture.
2. Expertise in geological survey and prospecting for strategic decision-making.
3. Proficiency in various mining techniques for gold and diamonds.
4. Knowledge of environmental impact assessment and sustainable mining practices.
5. Skills in processing, refining, and marketing of precious stones.
6. Compliance with safety regulations and ethical mining standards.
7. Gemology expertise for accurate stone identification and valuation.
8. Marketing and trade strategies for entering the global precious stones market.
9. Ability to maintain positive community relations in mining areas.
10. Networking opportunities with industry professionals during the internship.

I) Internationally Recommended Books and Materials

- "Gemstones of the World" by Walter Schumann
- "The Complete Book of Jewelry Making" by Carles Codina
- "SME Mining Engineering Handbook" by Howard L. Hartman and Scott G. Pruitt
- "Environmental Impact Assessment: Theory and Practice" by Peter Wathern
- "Safety and Health in Small-Scale Surface Mines" by H. C. Lindsey and J. F. Archibald

J) Eligibility

No specific prior experience is required, making it accessible to anyone interested in precious stones mining. However, applicants should be physically fit for fieldwork and adhere to safety regulations.