16TH INDIA INTERNATIONAL GOLD CONVENTION

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Precious Metals Assay and Training Institute (PMATI)

by

Ankur Goyal

Precious Metals Assay and Training Institute

A joint venture between World Gold Council and MMTC- PAMP

- A not for profit company, **industry driven body**, with the principal objective of
- **Providing training and certification in field of assaying**
- **Standardization and promoting best practices** for Gold and Precious metals Industry.
- Provide **learning opportunities** - acquiring new techniques and upgrading analytical skills
- Supported by Industry – GJEPC, GJC, BF, IBJA,AGRM and IIGJ

Why one should choose PMATI

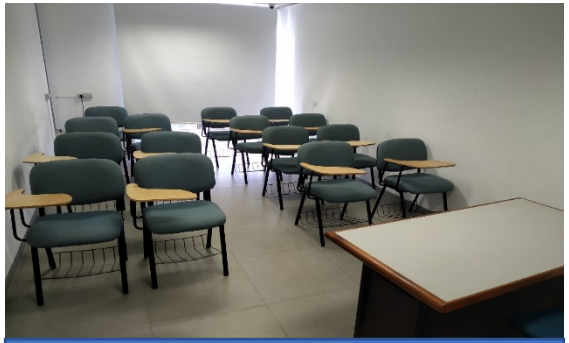
- A first of its kind for assay training in the country
- Well qualified and experienced faculty
- Strong technical support
- The state-of-art laboratory with high quality standards
- Structured learning approach with theory as well as practical
- Campus infrastructure at Indian Institute of Gems and Jewellery (IIGJ, Mumbai)
- The course content is developed by finest academic institutions in the country

State of the Art Laboratory

Analytical Lab

Fire Assay Lab

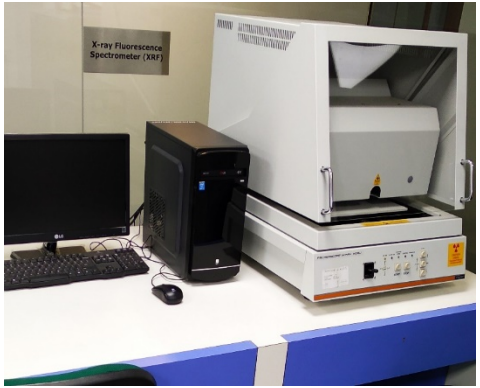
Fire Assay Lab



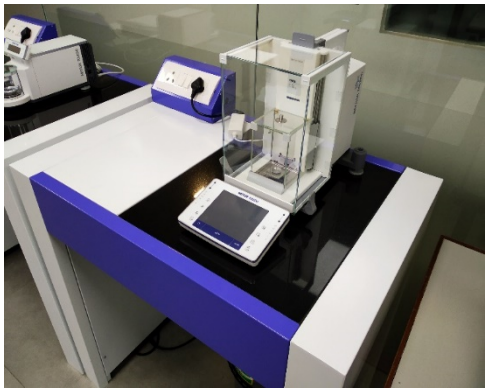
Modern Classroom

Instrumentation at PMATI Lab

Mettler Toledo Micro Balance-XPR2 having readability of 0.001mg



XRF CS/B1 (541)



Mettler Toledo Micro Balance-XPR2 having readability of 0.001mg

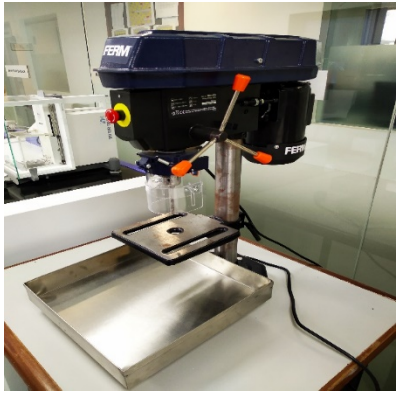
Cupellation Furnace FCOPP/F - Italimpianti

Instrumentation at PMATI Lab

Annealing Furnace Nabertherm GMBH (LT 9/11 SKM)

Parting Separation Hood Italimpianti Orafi CS/B1 (541)

Cupell Ball Treatment Unit Italimpianti Orafi MSLR/B (339)



Drilling Machine FERM Make

Initially started with Module 1 : Basic certification course in assaying

Duration	30 Days (132 Hrs – 40 Hrs. of theory + 80 Hrs. of Practical +12 Hrs. of Exam)		
Eligibility	1. Fresh B.Sc. Chemistry / B.Sc. Physics 2. Diploma Chemical / Diploma Metallurgy / Diploma Jewellery Design / Jewellery Manufacturing. 3. Graduate in any discipline or 12th science with minimum 1 year of working experience in Precious Metal Industry.		
Course Content	The course is divided into 4 weeks		
Wee1 : Foundation	**Week 2: Basic**	**Week 3: Expertise**	**Week 4 : Regulation and Assessment**
1. Introduction to basic chemistry of metal and alloys with special reference to precious metals. 2. Various health and safety practices while working in lab	XRF : Basic Theory and operations Sampling theory and practices	1. Gold assay by Fire Assay technique with theoretical and practical approach 2. Understanding sources of errors in fire assay results	1. Hallmarking rules and regulations 2. Theoretical and practical assessment.
Course Fee	INR. 15,000 + Taxes		

Along with one month course PMATI has also decided to conduct various short term courses like;

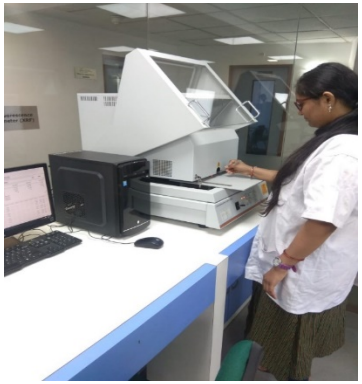
SUMMARY : SHORT TERM COURSES								
Course Title		Basic Certification Course in Assaying	General Awareness : IS 1418, IS 1417, IS 15820	XRF Principal and Its Instrumentation	Fundamentals of Assaying (Theory + Practical)	Theory of Assaying	Fundamentals of Assaying (Weekend Courses)	Gold Testing - Basic Awareness
Course Code		PMATI-O1	PMATI-O2	PMATI-O3	PMATI-O4	PMATI-O5	PMATI-O6	PMATI-O7
Course Duration	Total Duration in Days/ Hrs	22 Days/ 132 Hrs (120 Hrs Training +12 Hrs of Exam)	2 Days / 12 Hrs (10 Hrs of Training + 2 Hr of Exam)	4 Days / 24 Hrs (20 Hrs of Training + 4 Hrs of Exam)	12 Days / 72 Hrs (64 Hrs of Training + 8 Hrs of Exam)	3 Days / 10 Hrs (8 Hrs of Training + 2 Hrs of Exam)	5 Days / 30 Hrs (24 Hrs of Training + 6 Hrs of Exam)	1 Day / 3 Hrs
	Theory Duration (In Hrs)	40	10	8	12	8	10	3 hrs
	Practical Durations (In Hrs)	80	0	12	52	0	14	_
Training Site	Onsite / At PMATI	At PMATI	Onsite / At PMATI	Onsite / At PMATI	Onsite / PMATI	Onsite / PMATI / Online Webinars	Onsite/ at PMATI	Onsite/ at PMATI
Course Fee		15000 + Taxes (18%)	3000 + Taxes (18%)	6000 + Taxes (18%)	12000+ Taxes (18%)	6000 + Taxes (18%)	6000 + Taxes (18%)	500 + Taxes (18%) Per person

Short Term Course Details

Course Title		Basic Certification Course in Assaying	General Awareness : IS 1418, IS 1417, IS 15820	XRF Principal and Its Instrumentation
Course Code		PMATI-O1	PMATI-O2	PMATI-O3
Course Duration in Days / Hrs	Total Duration in Days/ Hrs	22 Days/ 132 Hrs (120 Hrs Training +12 Hrs of Exam)	2 Days / 6 Hrs (10 Hrs of Training + 2 Hr of Exam)	4 Days / 24 Hrs (20 Hrs of Training + 4 Hrs of Exam)
	Theory Duration (In Hrs)	40 (Daily 2 Hrs)	5	8 (Daily 2 Hrs)
	Practical Durations (In Hrs)	80	0	12
	Exam Duration (In Hrs)	12	1	4
Course Content	Theory Content	Chapter 1 : Lab Safety Practices Chapter 2 : Basic Metallurgy of Gold - Introduction with periodic table and crystal structure of Gold - Basic physiochemical and metallurgical properties of gold Chapter 3 : Sampling Techniques Chapter 4 : Techniques of Preliminary Analysis Chapter 5 : XRF Principal and Instrumentation Chapter 6 : Gold testing with classical fire assay technique - Major Challenges in Fire Assay Process - Basic Introduction about Fire Assay process and overview of IS1418 - Cupellation and significance of process parameters - Parting process and significance of process parameters - Distribution of PGM element in Gold & fire assay for such samples Chapter 7 : Hallmarking - Rules and Regulations * Assignment No 1 * Assignment No 2 * Assignment No 3 * Skype Interaction with MMTC-PAMP Experts	Chapter 1 : Lab Safety Practices Chapter 2 : Basic Metallurgy of Gold - Basic physiochemical and metallurgical properties of gold Chapter 3 : General Overview of IS 1418 Standard Chapter 4 : Factors affecting fire assay process. Chapter 5 : General Overview of IS 1417 Standard Chapter 6 : General Overview of IS 15820 Standard	Chapter 1 : Lab Safety Practices Chapter 2 : Techniques of preliminary analysis Chapter 3 : Basic Metallurgy of Gold - Introduction with periodic table and crystal structure of Gold - Basic physiochemical and metallurgical properties of gold Chapter 4 : XRF Principal and Instrumentation - Basic principal of XRF - XRF Instrumentation and functional principle - Types of XRF 5.Factors affecting accuracy and precision - Role of Reference materials in XRF testing - XRF verification and Calibration
	Practical Content	1. Basic Introduction and Practical hands on with all instrument setup available with PMATI 2. XRF Instrument verification with standard strip 3. Practical hands on with XRF instrument (atleast with 5 different purity samples) 5. Calibration of XRF machines with various standards and result interpretation 6. Practical hands on with classical fire assay technique (4 complete cycles)	_	1. XRF Instrument verification with standard 2. Practical hands on with XRF instrument (atleast with 5 different purity samples) 3. Calibration of XRF machines with various standards and result interpretation
Examination Criteria	Theory Exam Evaluation	200 Marks - 4 Hrs	50 Marks - 1 Hr	100 Marks - 2 Hrs
	Practical Exam Evaluation	280 Marks - 8 Hrs	_	100 Marks - 2 Hrs
	Viva Exam Evaluation	20 Marks - In Parallel with Practical Exam	_	50 Marks - In Parallel with Practical Exam
	Passing Criteria	60 % Individual in each section	60 % Individual in each section	60 % Individual in each section
Training Site	Onsite / At PMATI	At PMATI	Onsite / At PMATI	Onsite / At PMATI
Course Fee		15000 + Taxes (18%)	4000 + Taxes (18%)	6000 + Taxes (18%)

Short Term Course Details					
Course Title		Fundamentals of Assaying (Theory + Practical)	Theory of Assaying	Fundamentals of Assaying (Weekend Courses)	Gold Testing - Basic Awareness
Course Code		PMATI-O4	PMATI-O5	PMATI-O6	PMATI-O7
Course Duration in Days / Hrs	Total Duration in Days/ Hrs	12 Days / 72 Hrs (64 Hrs of Training + 8 Hrs of Exam)	3 Days / 12 Hrs (10 Hrs of Training + 2 Hrs of Exam)	5 Days / 30 Hrs (24 Hrs of Training + 6 Hrs of Exam)	1 Day / 3 Hrs
	Theory Duration (In Hrs)	12	10	10 (Daily 2 Hrs)	3
	Practical Durations (In Hrs)	52	0	14	_
	Exam Duration (In Hrs)	8	2	6	_
Course Content	Theory Content	Chapter 1 : Lab Safety Practices Chapter 2 : Basic Metallurgy of Gold - Introduction with periodic table and crystal structure of Gold - Basic physiochemical and metallurgical properties of gold Chapter 3 : Sampling Techniques Chapter 4 : Techniques of Preliminary Analysis Chapter 5 : XRF Principal and Instrumentation Chapter 6 : Gold testing with classical fire assay technique - Major Challenges in Fire Assay Process - Basic Introduction about Fire Assay process and overview of IS1418 - Cupellation and significance of process parameters - Parting process and significance of process parameters - Distribution of PGM element in Gold & fire assay for such samples Chapter 7 : Hallmarking - Rules and Regulations	Chapter 1 : Lab Safety Practices Chapter 2 : Basic Introduction about Fire Assay Process in Gold Analysis and General Overview about IS 1418 Chapter 3 : XRF Principal and Instrumentation Chapter 4 : Techniques of preliminary analysis Chapter 5 : Hallmarking Rules and Regulations	Chapter 1 : Lab Safety Practices Chapter 2 : Basic Metallurgy of Gold - Introduction with periodic table and crystal structure of Gold - Basic physiochemical and metallurgical properties of gold Chapter 3 : Basic Introduction about Fire Assay Process in Gold Analysis and General Overview about IS 1418 Chapter 4 : XRF Principal, Instrumentation and function Chapter 5 : Techniques of preliminary analysis Chapter 6 : Hallmarking Rules and Regulations	Chapter 1 : Techniques of preliminary analysis. Chapter 2 : Sampling Techniques Chapter 3 : Basic introduction about fire assay.
	Practical Content	1. XRF Instrument verification with standard strip 2. Practical hands on with XRF instrument (atleast with 5 different purity samples) 3. Practical Hands on with classical fireassay technique (4 Complete cycles)	_	1. Hands on practicals with XRF instruments , Machine verification 2. Practical Hands on with classical fireassay technique (2 Complete cycles)	_
Examination Criteria	Theory Exam Evaluation	100 Marks - 2 Hrs	100 Marks - 2 Hrs	50 Marks - 1 Hrs	_
	Practical Exam Evaluation	280 Marks - 6 Hrs	_	130 Marks - 5 Hrs	_
	Viva Exam Evaluation	20 Marks - In parallel with Practical Exam	_	20 Marks - In parallel with Practical Exam	_
	Passing Criteria	60 % Individual in each section	60 % Individual in each section	60 % Individual in each section	_
Training Site	Onsite / At PMATI	Onsite / PMATI	Onsite / PMATI / Online Webinars	Onsite/ at PMATI	Onsite/ at PMATI
Course Fees		12000+ Taxes (18%)	6000 + Taxes (18%)	7500 + Taxes (18%)	500 + Taxes (18%) Per person (Minimum 6 Students Required)

First batch glimpse



Client Base

Training imparted to candidates from :

- Prince Hallmarking Centre
- Muthoot Fincorp and Exim
- Titan Company Ltd
- HK Jewells, Surat

Q & A

Thank You!