

Prof. Dr. Rafiq Ahmad

Principal

Department of Metallurgy and Materials Engineering

University of the Punjab, Lahore

Principal.ceet@pu.edu.pk

ENGINEERING PROGRAM DATA

Following tabulated data (Program wise) as per given format is mentioned below:

TABLE –I: ACCREDITATION STATUS

Sr. No.	Program Title	Accreditation of intake Batches (Intake from-to-)	Green Signal Zero/ Interim Visits (Intake from-to-)
	B.Sc of Metallurgy and Materials Engineering	Accredited till 2010. Accreditation required from 2011 onward	N/A

TABLE –II: STUDENTS SUMMARY

B.Sc Metallurgy and Materials Engineering

Study Year	Batch/ Enrollment year	No. of Students Regular Section-I	No. of Students Section-II
2014	2018-2014	52	42
2013	2017-2013	40	39
2012	2015-2012	50	40
2011	2015-2011	43	34
	Total	185	155

TABLE –III: FACULTY SUMMARY**B.Sc Metallurgy and Materials Engineering****Summary of Faculty**

	Faculty Teaching Engineering Subjects			Faculty Teaching Non-Engineering Subjects		
	BSc	MSc	PhD	BSc	MSc	PhD
Dedicated Faculty (Departmental)	13	09	09			
Shared Faculty (Departmental)						
Shared Faculty (From other department)	07					
Visiting Faculty	04			06		

TABLE –IV: STUDENT; TEACHER RATIO**B.Sc Metallurgy and Materials Engineering**

	<u>Section-I</u>	<u>Section-II</u>
A. Total Students Currently Enrolled in the Engineering Program	185	155
B. Total Full Time Dedicated Faculty Members	13	
Student : Teacher Ratio [A : B]	11.56 : 1	9.68 : 1

TABLE –V: FACULTY DETAILS RATIO

Sr. No.	Name	PEC #	Designation	Joining Date	Details of Qualification			Specialization	Experience Total	Dedicated / Share
					Degree	Year	Institution			
1.	Engr. Prof. Dr. Muhammad Taqi Zahid Butt	Metal/372	Professor/Dean	1984	B.Sc	1982	B.Sc. (Engg.) Metallurgy & Materials Science, University of the Punjab, Lahore	Metallurgy & Material Science	31 Years	Dedicated
					Ph.D.	1990	University of West London, UK			
					Post Doc	1995 & 1997	Mechanical Engineering Laboratory, Tsukuba (Japan). University of Sheffield (UK)			
2.	Engr. Prof. Dr. Rafiq Ahmad	Metal/410	Professor/Principal		B.Sc	1984	DMME, University of the Punjab	Foundary	29 years	Dedicated
					M.Sc	1988	Metallurgical Engineering, U.E.T Lhr			
					Ph.D	1996	University of Leeds, UK			
3.	Engr. Aamir Nadeem Malik	Metal/659	Assistant Professor	11-02-1995	B.Sc (Engg.)	1987	ICET	Ferrous Metallurgy Fuel and furnaces Engineering materials	28	Dedicated
					M.Sc Eng	1990	ICET			

4.	Engr. Dr. Muhammad Kamran	Metal/1236	Assistant Professor	06-2001	B.Sc Engg.	1996	University of the Punjab	Welding Solidification Characterization Corrosion Coating	16	Dedicated
					M.Sc Engg.	2000	NED UET Karachi			
					PhD	2008	University of Leoben, Austria			
5.	Engr. Dr. Asma Salman	Metal/1824	Assistant Professor	01-08-2000	B.Sc Engg.	1996	University of the Punjab	Thermal Spray Coating Titanium powder Metallurgy Coatings for die casting dies	17	Dedicated
					M.Sc M.Sc	1998 2004	University of Central Punjab UET			
					PhD	2011	The Waikat University, NZ			
6.	Engr. Dr. Mohsin Ali Raza	Metal/1491	Assistant Professor	16-01-2001	B.Sc Engg.	2000	University of the Punjab	Nanomaterials Polymer Nano-composites	15	Dedicated
					M.Sc	2007	KTH, Sweden			
					PhD	2012	University of LEEDS, UK			
7.	Engr. Dr. Aqil Inam	Metal/1322	Assistant Professor	21-08-2002	B.Sc Engg.	1998	UET, Lahore	Metallurgy and material science	15	Dedicated
					M.Sc Engg.	2007	University of the Punjab			
					PhD	2013	University of LEEDS, UK			

8.	Engr. Dr. Tahir Ahmad	Metal/1687	Assistant Professor	03-09-2012	B.Sc Engg.	2003	University of the Punjab	Powder Metallurgy Nano-composites Advance materials	12	Dedicated
					M.Sc Engg.	2007	University of the Punjab			
					PhD	2012	UTP, Malaysia			
9.	Engr. Dr. Muhammad Umer Manzoor	Metal/1552	Assistant Professor	21-07-2014	B.Sc Eng	2001	University of the Punjab	Thin film nanocoating CNT Nano-composites	10	Dedicated
					M.Sc Eng	2008	UET, Lhr			
					PhD	2012	University of Ulster, UK			
10.	Engr. Kashif Mairaj Deen	Metal/2105	Assistant Professor	On Study Leave						
11.	Engr. Muhammad Atif Makhdoom	Metal/2430	Assistant Professor	On Study Leave						

12.	Engr. Muhammad Nauman Alam Siddiqui	Metal/2031	Assistant Professor	02-07-2014	B.Sc Engg.	2007	University of the Punjab	Materials Testing; Failure Analysis; Welding; NDT	08	Dedicated
					M.Sc Engg.	2009	UET, Lhr			
13.	Engr. Salman Aziz	Metal/1673	Lecturer	On Study Leave						
14.	Engr. Faraz Hussain	Metal/2219	Lecturer	26-10-2009	B.Sc Engg.	2009	University of the Punjab	Corrosion Engineering	06	Dedicated
					M.Sc Engg.	2012	UET, Lahore			
15.	Engr. Fahad Riaz	Metal/2108	Lecturer	28-03-2012	B.Sc Engg.	2008	University of the Punjab	Corrosion Engineering	03	Dedicated
					M.Sc Engg.	2012	University of the Punjab			
16.	Engr. Sehrish Mukhtar	Metal/2605	Lecturer	28-12-2011				Metallurgy and materials engineering Biomaterials	03	Dedicated
					M.Sc Engg.	2014	University of the Punjab			

17.	Engr. Muhammad Ishtiaq	Metal/ 3167	Lab Engineer	30-12- 2013	B.Sc Engg.	2010	University of the Punjab	Phase Transforma tion Physical Metallurgy Advance Materials	02	Dedicated
					M.Sc Engg.	2015	UET, Lahore			
18.	Engr. Ameerq Farooq	Metal/ 3123	Research Officer	13-01- 2012	B.Sc Engg.	2010	CEET, PU	Surface Engineerin g Corrosion Engineerin g	03	Dedicated
					M.Sc	2013	CEET, PU			
19.	Engr. Adil Mansoor	Metal/ 3062	Lab Engineer	29-01- 2015	B.Sc Engg.	2011	CEET, PU	Composites	02	Dedicated

TABLE-VI: LABOURATERIES AND LAB STAFF DETALS

Sr. No.	Name of Laboratory (Staff Names--Qualifications)	Lab(s) of Course(s) Conducted in the Lab.	Type(s) of Workstations (No. of each type)	Nature of Experiments	No. of Students per Workstation
1.	<u>Mineral Processing Lab</u> 1. Engr. Dr. Aqil Inam (Lab Incharge) Ph.D 2. Engr. Faraz Hussain (Lab Associate) 3. M.Sc (Engg) Engr. M. Ishtiaq (Lab Engineer) M.Sc (Engg) 4. Mr. Liaquat Hussain (Lab assistant)---BA 5. Mr. Rafiq (Lab attendant)— Matric	Mineral Processing	Equipment for size reduction experiments: 1. Jaw Crusher (1) 2. Ball mill (2) 3. Hammer Mill (1) 4. Sieve Shaker (1) 5. Magnetic separator (1) 6. Pebble mill 7. Pan Granulator 8. End Runner Mill 9. Hammer Mill 10. Disc Grinder Apparatus for Ore analysis: 1. Hot plate with magnetic stirrer (2) 2. Platinum crucible (2) 3. Porcelain crucibles 4. Oven (1) 5. Muffle Furnace (1) 6. Spectrometer (1) 7. Glass apparatus (pipette, burette, flasks, beakers, etc.) 8. Precision Digital balances (3)	Hands-on	3 to 4

2.	<p><u>Engineering Ceramics and Glasses Lab</u></p> <ol style="list-style-type: none"> 1. Engr. Dr. Mohsin Ali Raza (Lab Incharge)-- Ph.D 2. Engr. Sehrish Mukhtar (Lab Associate) M.Sc (Engg) 3. Engr. Adil Mansoor (Lab Engineer) – B.Sc (Engg) 4. Mr. Liaquat Hussain (Lab assistant)---BA 5. Mr. Asim (Lab attendant)--- Matric 	<p>Engineering Ceramics and glasses</p>	<ol style="list-style-type: none"> 1. Tube Furnace (1) 2. Muffle Furnace (1) 3. Oven (1) 4. Digital Balance (1) 5. Hydraulic Press (1) 6. Moulds for Slip Casting 7. Crucibles 8. Ball mill (1) 9. Glass Apparatus 10. Water distillation unit (1) 11. Deioniser (1) <p>Some of the experiments are performed in Mineral processing lab and Foundry Engineering Lab</p>	Hands-on	3 to 4
3.	<p><u>Mechanical Testing Lab</u></p> <ol style="list-style-type: none"> 1. Engr. Dr. Muhammad Kamran (Lab incharge) (Ph.D) 2. Engr. M. Ishtiaq M.Sc (Engg) (Lab Engineer) 3. Mr. Hafiz Siddique (Lab attendant)-- Matric 4. Mr. Ismail (Lab attendant)-- Matric 	<p>Mechanical Properties of Engineering Materials</p>	<p>Equipment for mechanical testing:</p> <ol style="list-style-type: none"> 1. Deep Drawing machine (1) 2. Brinell Hardness testing machine (1) 3. Rockwell Hardness testing machine (1) 4. Tensometer with tensile and compression testing accessories (2) 5. Microhardness tester (1) 6. Instron Universal Plastic testing machine (1) 7. Vickers Hardness testing 	Hands-on	3 to 4

			machine		
4.	<p><u>Physical Metallurgy Lab</u></p> <ol style="list-style-type: none"> 1. Engr. Dr. Muhammad Umer Manzoor (Lab incharge) Ph.D 2. Engr. Faraz Hussain (Lab Associate) M.Sc (Engg) 3. Mr. Shahzad Malik (Lab Assistant)---DAE 4. Mr. Riaz Muhammad (lab attendant) 5. Mr. Hafiz Siddique (lab attendant)—Matric 6. Mr. Muhammad Siddique (lab attendant)—Matric 	<ol style="list-style-type: none"> 1. Metallography and Heat treatment 2. Physical Metallurgy 3. Heat Treatment and Phase Transformations 	<p>Equipment:</p> <ol style="list-style-type: none"> 1. Light Optical Metallurgical Microscopes (08) 2. Lica Optical Research microscope with digital camera and image processing software (1) 3. Stereo Microscopes (02) 4. Mounting press with dies (1) 5. pneumatic mounting process-batch type (1) 6. Semi-automatic polishers and grinders for sample preparation 7. Grinders (2) 8. Polisher (1) 9. Die Cut off machine (02) 10. Thermocouples (3) 11. Muffle furnace (03) 12. Tube furnace (1) 13. Crucible furnace with thermocouple (02) 14. Dry Oven (1) 15. End Quench unit for heat treatment 	Hands-on	3 to 4

			16. Standard metallurgical specimens 17. Hot Plates (03)		
5.	<p><u>Polymer Processing Lab</u></p> <p>1. Engr. Dr. Mohsin Ali Raza (Lab incharge)-- (PhD)</p> <p>2. Shahzad Malik (Lab Assistant)---DAE</p> <p>3. Mr. Riaz (Lab Assistant) - Matric</p> <p>4. Mr. Liquat Ali Kamboh (Lab Assistant)-- Matric</p> <p>5. Mr. Ismail (Lab Attendant) -- Matric</p>	Composite and Polymeric Materials	<p>Equipment:</p> <p>1. Lab Scale Extruder (1) 2. Lab Scale Injection moulding machine (1) 3. Vacuum Oven (1) 4. Hot Plate/ Magnetic Stirrer (3) 5. Heating Mantle (1) 6. Digital Balances (2) 7. Hot Press (1) 8. Instron Plastic Testing Machine (1) 9. High Speed Mixer/Dispersing Unit (1) 10. Vacuum mixer 11. Glass apparatus</p>	Hands-on	3 to 4
6.	<p><u>Corrosion Engineering Lab</u></p> <p>1. Engr. Nauman Alam Siddiqui (Lab incharge)- MSc. (Engg.)</p> <p>2. Engr. Faraz Hussain</p>	Corrosion Engineering	<p>Equipment:</p> <p>1. GamryPotentiostat 2. Precision digital balance (1) 3. pH meter (2) 4. Digital multimeter (1) 5. Standard calomel reference electrodes (3) 6. Ag-AgCl reference electrodes</p>	Hands-on	3 to 4

	<p>(Lab Associate)</p> <p>MSc. (Engg.)</p> <p>3. Engr. Ameerq Farooq (Lab Engineer)— MSc. (Engg.)</p> <p>4. Mr. Liqueat Hussain (Lab Assistant) -- Matric</p> <p>5. Mr.Hameed (Lab attendant)--Matric</p> <p>6. Mr. Muhammad Asim (Lab Attendant)---Matric</p>		<p>(2)</p> <p>7. Cu-CuSO4 reference electrodes (2)</p> <p>8. Electrolyte conductivity meter (2)</p> <p>9. Deioniser (1)</p> <p>10. High impedance voltmeter (1)</p> <p>11. Power supply for electroplating (2)</p> <p>12. Water bath (1)</p> <p>13. Water distillation unit (1)</p> <p>14. Glass apparatus</p> <p>15. Oven</p>		
7.	<p><u>Surface Engineering and Tribology Lab</u></p> <p>1. Engr. Dr. Usma Salman (Lab incharge)- Ph.D</p> <p>2. Engr. Faraz Hussain (Lab Associate) M.Sc. (Engg.)</p> <p>3. Engr. Sehrish Mukhtar (Lab Associate)- M.Sc. (Engg)</p> <p>4. Engr. Ameerq Farooq (Lab Engineer)-</p>	<p>Surface Engineering and Tribology</p>	<p>Equipment:</p> <p>1. Sand/grit blasting machine</p> <p>2. Surface Profilometer</p> <p>3. CNS Bresle Kit for surface contamination checking</p> <p>4. Spray Paint unit</p> <p>5. Power supply</p> <p>6. Paint and coating thickness measurement</p> <p>7. Elcometer 139 Bresle Kit and patches</p> <p>8. Elcometer 108 Hydraulic Adhesion tester</p> <p>9. Viscometers</p> <p>Some of the equipment listed in mineral processing, fuel</p>	Hands-on	3 to 4

	M.Sc. (Engg.) 5. Mr. Liaqat Ali Komboh (Lab Assitant) - Matric 6. Mr. Abdul Hameed (Lab attendant)--Matric		furnaces and physical metallurgy lab is also used for this lab.		
8.	<u>Foundry Engineering Lab</u> 1. Engr. Prof. Dr. Rafiq Ahmad (Lab Incharge)- Ph.D. 2. Engr. Dr. M. Kamran (Lab Associate)- Ph.D. 3. Engr. Sehrish Mukhtar (Lab Associate)- M.Sc. (Engg.) 4. Mr. Shahzad Malik (Lab Engineer)-DAE 5. Mr. Liaquat Ali Komboh (Lab assistant)-Matric 6. Mr. Ismail (Lab attendant)-Matric	1. Moulding Techniques 2. Casting Design and Foundry Alloys 3. Foundry Engineering-I 4. Foundry Engineering-II	Equipment: 1. Pit Furnace (02) 2. Sand mixer small (1) 3. Sand mixer large (1) 4. Sand Muller (1) 5. ASF standard Rammer (1) 6. Moisture teller (1) 7. Compactibility tester (1) 8. Universal sand strength test machine (1) 9. Permeability meter (1) 10. Rapid sand washer (1) 11. Electric weighing machine (1) 12. Electric test sieve shaker (1) 13. Hacksaw machine 14. Centrifugal casting machine 15. Foundry tools 16. Crucibles for aluminium and its alloys (3) 17. Crucibles for copper and its alloys (2) 18. Crucibles for cast iron and its alloys (2) 19. Digital controller	Hands-on	3 to 4

			thermocouple (2) 20. Moulding boxes (45) 21. Metallic gravity die casting machine (2) 22. Carbon dioxide cylinder (2) 23. Disc cutter (1) 24. Disc grinder machine (1) 25. Wooden patterns (70) 26. Green hardness meter (B) scale (1) 27. Green hardness meter C scale (1) 28. Foundry hydrometer (1) 29. Mould strength meter (1) 30. Tensile test for carbon dioxide mould apparatus (1) 31. Induction melting furnace (2) 32. Bench Drill machine 33. Hand Drill Machine (03) 34. Tonges 35. Various tools 36. Soldering iron		
9.	<u>Welding Lab</u> 1. Engr. Dr. M. Kamran (Lab Incharge)-Ph.D. 2. Engr. Faraz Hussain (Lab Associate)-M.Sc.(Engg) 3. Engr. Ameerq Farooq (Lab Engineer) –M.Sc. (Engg)	Welding and Joining Processes.	Equipment: 1. Spot Welding machine (1) 2. Oxy-Gas Welding equipment (1) 3. Tungsten inert gas welding (1) 4. Metal inert gas welding (1) 5. Shielded metal arc welding (1) 6. Dye Penetrate test 7. Ultrasonic tester	Hands-on	3 to 4

	<p>4. Mr. Ismail (Lab Assistant)--Materic</p> <p>5. Mr. Asim (Lab Attendant)-Matric</p> <p>6. Mr. Hafiz M. Siddique (Lab Attendant)--Matric</p>		<p>Metallography equipment listed in Physical metallurgy Lab is also used for microstructural study of welds.</p>		
10.	<p><u>Computer Applications in Materials Engineering</u></p> <p>1. Dr. M. Kamran (Lab Incharge)</p> <p>2. Engr. Fahad Riaz (Lab Associate)</p> <p>3. Engr. M. Ishtiaq (Lab Associates)</p> <p>4. Mr. M. Tayyab (Lab Attendant)</p>	<p>1. Computer Applications in Materials Engineering</p>	<p>Equipment</p> <p>1. Computers (30)</p>	Hands-on	01
11.	<p><u>Fuel Lab</u></p> <p>1. Engr. Faraz Hussain (Lab Incharge)</p> <p>M.Sc. Engg.)</p> <p>2. Engr. Fahad Riaz (Lab Associate)</p> <p>M.Sc. (Engg.)</p> <p>3. Mr. Ashiq Ali</p>	<p>Fuel and Furnaces</p> <p>(Shared workshop with Institute of Chemical Engineering and Technology)</p>	<p>Equipment:</p> <p>1. Bomb Calorimeter</p> <p>2. Engler Visometer</p> <p>3. Saybolt Viscometer</p> <p>4. Junker's Calorimeter</p> <p>5. Furnaces (2)</p> <p>6. Flash point tester</p> <p>7. Aniline point</p> <p>8. Conradson Carbon</p> <p>9. Redwood Viscometer -1</p> <p>10. Redwood Viscometer-2</p>	Hand-on	3 to 4

	(Lab assistant)- Matric 4. Mr. Waseem Shahzad (Lab assistant)-Matric				
12.	<u>Physics Lab</u> 1. Engr. Sehrish Mukhtar (Lab Incharge)- M.Sc. (Engg.) 2. Mr. Muhammad Qasim (Lab assistant)- Matric 3. Mr. Hamid Naeem (Lab attendant)- Matric	Applied Physics (Shared workshop with Institute of Chemical Engineering and Technology)	Equipment: 1. Galvanometer 2. Fly wheel 3. Calorimeter 4. Electrochemical Equivalent measurement setup 5. Care-Foster bridge 6. Post office box 7. Compound pendulum 8. Sextant apparatus 9. Maxwell needle 10. Potentiometer	Hands-on	3 to 4
13.	<u>Drawing Hall</u> 1. Engr. Dr. Tahir Ahmad (Lab Incharge)—Ph.D. 2. Engr. M. Ishtiaq M.Sc (Engg) 3. Mr. Shahzad Malik (Lab Assistant)- DAE 5. Mr. Abdul Hameed (Lab Attendant) -Matric	Engineering Drawing Graphics (Shared workshop with Institute of Chemical Engineering and Technology)	Drawing Tables (30)	Hand-on	01

14.	<p><u>Workshop</u></p> <ol style="list-style-type: none"> 1. Engr. Dr. Tahir Ahmad (Lab Incharge)—Ph.D. 2. Mr. Shahzad Malik (Lab Assistant)- DAE 3. Mr. Asif (Lab Assistant)-Matric 4. Mr. Abdul Hameed (Lab Attendant) -Matric 	<p>Workshop practice</p> <p>(Shared workshop with Institute of Chemical Engineering and Technology)</p>	<p>Equipment:</p> <ol style="list-style-type: none"> 1. Lathe machine (1) 2. Drilling machine (1) 3. Grinder (1) 4. Hexa cutter (1) 5. Shaper machine (1) 6. Tool grinder (1) 7. Miscellaneous tools <p>Sample preparations for mechanical testing of materials are also carried out in workshop.</p>	Hands-on	3 to 4
15.	<p><u>Instrumentation & Process Control</u></p> <ol style="list-style-type: none"> 1. Engr. Fahad Riaz (Lab-In-Charge) 2. Engr. Faraz Hussain (Lab Associate) 3. Mr. Khurram (Lab Assistant) 	<p>Instrumentation & Process Control</p>	<ol style="list-style-type: none"> 1. Thermocouple 2. Resistance Temperature Device 3. Dead Weight Tester 4. Manometer 5. Level Sensor 6. Bourdon Gauge 7. Thermometers for Time constant 	Hands on	3 to 4
