

SPECIFIC SELECTION CRITERIA FOR SECOND AND FIRST YEAR UNDERGRADUATE PRACTICALS

Second year practicals requiring TAs		First year practicals requiring TAs	
2P2	Dislocations & Deformation (B-S Li , JTC)	1P1b	Intro to Microscopy, (KAQOR , SLP)
2P9	Steels (C Salter , TJM)	1P10	LabVIEW & MATLAB (AARW , E Darnbrough)
2P10	Materials Selection (DEJA , tbc)	1P9	Polymers (AARW/RIT , HEA)
2P3	Casting (KAQOR , tbc)	1P2	Young's Modulus (JaMS , TJM)
2P7	Corrosion (C Cheng , TJM)	1P5	Bubble Raft (SCB , AIK)
2P1	Diffusion (TJM , MLG)	1P3	Electrode Potentials (KP , PRW)
2P11	Mechanical Properties of Polymers (HEA , tbc)	1P6	Thermal Analysis (tbc , KAQOR)
2P6	Extrusion (PDN , AJW)	1P8	Metallography (Y Zayachuk , tbc)
2P4	XRD Detective (SCS , MRC)	1P7	Fabrication & Testing (JTC/W Cui , tbc)
2P5	SEM & Fracture (P Karamched , AJW)	1P4	Energy Levels & Band Gaps (PRW , JaMS)
2P12	Semiconductor Devices (S Bonilla , AIK)		

Grey text indicates that it is likely that the positions for Teaching Assistants for these practicals have been filled for this year although please do include these if you have a specific interest as we do sometimes require reserves.

SELECTION CRITERIA

MT	YEAR 2 (Mon, Tue, Wed)	YEAR 1 (Thur, Fri)
	<p>2P2, Dislocations & Plasticity (B-S Li, JTC)</p> <ul style="list-style-type: none"> • Knowledge of mechanical properties of metals • Experience of working with liquid nitrogen • Experience of polishing metal samples and etching • Experience of etching • Experience of optical microscopy 	<p>1P1b, Intro to Microscopy (KAQOR, SLP)</p> <ul style="list-style-type: none"> • Experience of Microscopy • Experience of preparing samples
	<p>2P9, Steels (C Salter, TJM)</p> <ul style="list-style-type: none"> • Experience of tensile testing • Experience of polishing metal samples • Experience of etching • Experience of optical microscopy 	<p>1P10, LabVIEW & MATLAB (AARW, E Darnbrough)</p> <ul style="list-style-type: none"> • A working knowledge of a programming language, ideally MATLAB and LabVIEW • Experience with computer data logging
	<p>2P10, Materials Selection (DEJA, tbc)</p> <ul style="list-style-type: none"> • Polishing metals • Etching • Optical microscopy 	<p>1P9, Polymers (AARW/RIT, HEA)</p> <ul style="list-style-type: none"> • Knowledge of polymer behaviour • Experience of working with liquid nitrogen
	<p>2P3, Casting (KAQOR, tbc)</p> <ul style="list-style-type: none"> • Experience of casting molten metal • Experience of polishing metal samples • Experience of etching • Experience of optical microscopy 	<p>1P2, Young's Modulus (JaMS, TJM)</p> <ul style="list-style-type: none"> • Experience with strain gauges • Knowledge of stress/strain analysis including Mohr's circle

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HT	<p>2P7, Corrosion (C Cheng, TJM)</p> <ul style="list-style-type: none"> • Knowledge of electrochemistry & corrosion • Experience using potentiostat • Experience with computer controlled equipment and data logging 	<p>1P5, Bubble Raft (SCB, AIK)</p> <ul style="list-style-type: none"> • Materials Science/Physics • Dislocation theory • (Digital) photography
	<p>2P1, Diffusion (TJM, MLG)</p> <ul style="list-style-type: none"> • Experience or knowledge of heat treatment of steels • Experience of polishing metal samples • Experience of etching • Experience of optical microscopy and image analysis 	<p>1P3, Electrode Potentials (KP, PRW)</p> <ul style="list-style-type: none"> • Knowledge of electrochemistry and thermodynamics • Experience of titration experiments
	<p>2P12, Semiconductor Devices (S Bonilla, AIK)</p> <ul style="list-style-type: none"> • Physics background with understanding of the operation of a bipolar transistor • Some basic ability in connecting up electrical circuits • Ability to use the SEM in voltage contrast mode • Familiarity with using LabVIEW 	<p>1P6, Thermal Analysis (tbc, KAQOR)</p> <ul style="list-style-type: none"> • Experience of working with furnaces and molten metal • Experience with computer data logging • Knowledge of phase diagrams and solidification theory
	<p>2P6, Extrusion (PDN, AJW)</p> <ul style="list-style-type: none"> • Experience of mechanical testing • Experience of casting molten metal 	<p>1P8, Metallography (Y Zayachuk, tbc)</p> <ul style="list-style-type: none"> • Experience of polishing metal samples • Experience of etching • Experience of optical microscopy

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TT	2P5, SEM & Fracture (P Karamched , AJW) <ul style="list-style-type: none"> • Experience of SEM imaging • Knowledge of fracture mechanics and mechanisms • Experience of working with liquid nitrogen 	1P7, Fabrication & Tensile Testing (JTC/W Cui , tbc) <ul style="list-style-type: none"> • Experience of workshop practice • Knowledge of the mechanical properties of materials • Experience of mechanical testing
	2P4, XRD Detective (SCS , MRC) <ul style="list-style-type: none"> • Experience with XRD 	1P4, Energy Levels & Band Gaps (PRW , JaMS) <ul style="list-style-type: none"> • Physics background with understanding of atomic spectra • Experience of basic optics • Knowledge of LED
	2P11, Mechanical Properties of Polymers (HEA , tbc) <ul style="list-style-type: none"> • Knowledge of polymer behaviour • Knowledge of polymer testing 	