

# DEPARTMENT OF MATERIALS

## DIVISION OF MATHEMATICAL, PHYSICAL AND LIFE SCIENCES

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### LECTURE LIST FOR HILARY TERM 2024

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Lectures begin on the first possible day after the beginning of Full Term (Sunday, 14 January) unless otherwise stated

**Unless otherwise indicated, all lectures begin on the hour and finish at five minutes before the next hour.**

**No food or drink (except bottled water) is permitted in the lecture theatres.**

### Timetable for Materials Science

Key to Teaching Venue Abbreviations:

HRLT	Hume-Rothery Lecture Theatre, Hume-Rothery Building
BRLT	Banbury Road Lecture Theatre, 21 Banbury Road
LR3	Lecture Room 3, Thom Building (Eng Sci)
LR8 IEB	Lecture Room 8, Information Engineering Building
ETBCR	ETB Committee Room, Engineering Technology Building
BRCR	Banbury Road Conference Room, 21 Banbury Road
PRMR	Parks Road Meeting Room, 12/13 Parks Road
HRMR	Hume-Rothery Meeting Room, Hume-Rothery Building
HBTL	Holder Building Teaching Labs, Holder Building
HRF	Hume-Rothery Foyer, Hume-Rothery Building
RR	Rex Richards Room 40.08, Rex Richards Building

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
<b>FIRST YEAR</b>			
Practical Class Meeting	Prof. D.E.J. Armstrong	M. 9 (wk 1)	HRLT
Practical Classes	Various staff	Th. F. 2-5 (wks 1-8)	HBTL
Computing for Materials Science	Prof. J.R. Yates	T. 9-12 (wks 2-3)	RR
Engineering Drawing Classes	Ms B. Hughes	F. 2-5 (CCC/TRI/MAN/STC wks 1&3, SEH/QNS/STA/CCC wks 2&4)	Engineering Design Office, ETB
Crystallography Classes	Dr A. Mostaed & Dr A.A. Sheader	T. 9-12 (wks 4,6,8)	LR3 Thom Bldg
How to Obtain a Materials-related Summer Placement	Prof. T.J. Marrow	T. 12.15-1.15 (wk 1)	HRLT
Looking to the Future: Career Planning	Dr A. Evans (OUCaS)	T. 2.00-3.00 (wk 2)	HRLT
Prelims Examination Briefing	Prof. T.J. Marrow	W. 10 (wk 8)	HRLT
<b>Materials Science 1: Physical Foundations of Materials</b>			
Electromagnetic Properties and Devices	Prof. S.C. Speller & Prof. R.S. Bonilla	M. W. Th. F. 11 (wk 1) M. Th. F. 11 (wk 2) M. Th. F. 11 (wk 3) W. 9, F. 11 (wk 4)	HRLT
Random Processes & Statistical Physics	Prof. R.S. Weatherup	M. W. Th. 11 (wks 4,6) M. Th. 11 (wk 5)	HRLT
Wave Mechanics, Quantum Theory and Bonding	Prof. R.J. Nicholls & Dr F. Fedele	Th. F. 12 (wks 4,6) Th. 12 (wk 7) F. 12 (wk 7) M. W. 12 (wk 8)	HRLT BRLT HRLT
<b>Materials Science 2: Structure and Mechanical Properties of Materials</b>			
Defects in Crystals	Prof. M.R. Castell	M. W. Th. F. 12 (wks 1,3)	HRLT
Structures of Crystalline and Glassy Materials	Prof. M.L. Galano	M. W. 12 (wk 4) M. Th. 12 (wk 5)	HRLT
<b>Materials Science 3: Transforming Materials</b>			
Electrochemistry	Prof. M. Pasta	M. W. Th. 9 (wks 6-7) F. 9 (wk 6) F. 9 (wk 7)	HRLT BRLT
<b>Mathematics for Materials Science</b>			
Taylor Series and Limits	Dr A.A. Sheader	W. Th. F. 9 (wk 1)	HRLT
Integration & Complex Numbers	Dr J.C.A. Prentice	M. Th. F. 9 (wks 2-4)	HRLT
Ordinary Differential Equations	Dr A.A. Sheader	M. Th. F. 9 (wk 5) M. W. 12 (wk 6) M. 12 (wk 7)	HRLT

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
<b>SECOND YEAR</b>			
<b>GP1: Lifecycle, Processing &amp; Engineering of Materials</b>			
Materials End-of-Life	Prof. H.E. Assender & Prof. S. Lozano-Perez	W, 10, Th. 10 (wks 1-4) F. 12 (wks 1-2) M. 11 (wks 3-4)	BRLT
<b>GP2: Electronic Properties of Materials</b>			
Semiconductor Materials and Devices	Dr C.S. Allen & Prof. R.S. Bonilla	W. Th. F. 12 (wks 4-6) W. 12 (wk 7)	BRLT HRLT
<b>GP3: Mechanical Properties of Materials</b>			
Plastic Deformation of Materials	Dr E. Liotti	T. W. 9 (wks 1-4) F. 9 (wks 1-2)	BRLT
Structural Failure of Materials	Prof. R. I. Todd	In-person lectures: M. 9 (wk 3) Th. 9 (wk 5)	BRLT
		Recommended view time of online lectures Th. 9, F. 9 (wks 3-4) M. 9 (wks 4-5)	
<b>GP4: Structure &amp; Thermodynamics of Materials</b>			
Structural & Compositional Characterisation of Materials	Prof. S. Lozano-Perez	T. 9, W. 11, Th. 10 (wks 5-6) T. 9, W. 11 (wk 7)	BRLT HRLT
<b>Other Lectures</b>			
Entrepreneurship/ Business Plan (Lecture)	Dr S.M. Wilkinson	F. 11 (wks 1-4,6-7) T. 11 (wk 8)	BRLT
Entrepreneurship/ Business Plan (Lecture)	S.P. Newbury	Recommended view time of online lectures F. 11 (wk 5)	
Entrepreneurship/ Business Plan (Project Clinic)	Dr S.M. Wilkinson	ONLINE - Th. 2-4 (wk 3) 15 mins per group between 2pm and 4pm (to sign up in advance)	
Entrepreneurship/ Business Plan (Feedback Clinic)	Dr S.M. Wilkinson	ONLINE - F. 2-4 (wk 7) 15 mins per group between 2pm and 4pm (to sign up in advance)	
Practical Class Meeting	Prof. D.E.J. Armstrong	M. 11 (wk 1)	BRLT
Industrial Visit	Dr E. Liotti	Th. 1-6 (wk 8)	HRF
Practical Classes	Various staff	M. T. W. 2-5 (wks 1-8)	HBTL
How to Obtain a Materials-related Summer Placement	Prof. T.J. Marrow	T. 12.15-1.15(wk 1)	HRLT
Tata Steel Industrial Lecture, Prize-giving & Lunch	Dr E. Liotti & Tata Steel Representative	Th. 12-2 (wk 3) <b>tbc</b>	LR8
Poster Competition	Prof. T.J. Marrow & Prof. D.E.J. Armstrong	F. 4-6 (wk 1)	IEB Atrium
<b>Supplementary Subjects</b>			
History and Philosophy of Science: The Origins of Science	Dr S. Allen	M. 12 (wks 1-8) See <a href="#">Canvas</a> for details	tbc

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
Quantum Chemistry	Prof. W. Barford & Prof. J.E. McGrady	T. F. 11 ( <i>wks 1-7</i> )	Physical and Theoretical Chemistry Laboratory
<b>THIRD YEAR</b>			
<sup>1</sup> Atomistic Modelling (two-week module)	Dr C.E. Patrick & Prof. J.R. Yates	M-F. 9-5 ( <i>wks 1-2</i> )	RR
<sup>1</sup> Advanced Characterisation of Materials (two-week module)	Prof. M.P. Moody, Prof. M.L. Galano, Prof. N. Grobert & others	M-F. 9-5 ( <i>wks 1-2</i> )	Lectures – HRLT Practical work – location varied
See timetable issued by module organisers for precise details and locations			

### Hilary Term Options (OP2)

#### Lectures

Advanced Polymers	Dr M. Forghani	T. 11 ( <i>wks 3,6-7</i> ) T. 11 ( <i>wks 4-5</i> ) Th. 12 ( <i>wk 3</i> ) F. 10 ( <i>wks 3-6</i> ) W. 9 ( <i>wk 5</i> ) Th. 11 ( <i>wk 6</i> )	HRLT BRLT BRLT LR8
Quantum Technology	Prof. J.M. Smith	Th. 12 ( <i>wks 4-7</i> ) F. 9 ( <i>wks 4-5</i> ) M. 12 ( <i>wk 5</i> ) W. 10 ( <i>wks 6,8</i> ) F. 10 ( <i>wk 7</i> ) M. 11 ( <i>wks 7-8</i> )	LR8
Biomaterials & Natural Materials	Prof. J.T. Czernuszka	M. 11, Th. 9 ( <i>wks 3-6</i> ) T. 9 ( <i>wk 3</i> ) T. 10 ( <i>wk 5</i> ) W. 12 ( <i>wk 6</i> ) W. 9 ( <i>wk 7</i> )	LR8 HRLT BRLT LR8
Enabling Nanotechnology: From Materials to Devices	Prof. H. Bhaskaran	M. 12, W. 9 ( <i>wks 3-4,6</i> ) T. 12 ( <i>wks 3, 6-7</i> ) T. 10 ( <i>wk 4</i> ) W. 12, Th. 9 ( <i>wk 7</i> )	LR8 HRLT BRLT LR8
Materials for Nuclear Systems	Prof. T.J. Marrow, Prof. D.E.J. Armstrong & Prof. S. Lozano-Perez	W. 12 ( <i>wks 3-5</i> ) Th. 10 ( <i>wks 3-4</i> ) F. 9 ( <i>wks 3, 6-7</i> ) T. 4 ( <i>wk 5</i> ) M. 9 ( <i>wks 6-8</i> )	LR8  BRLT
Energy Materials	Prof. M. Pasta, Prof. M.S. Islam & Prof. R.S. Weatherup	M. 9, W. 10, F. 12 ( <i>wks 3-5</i> ) T. 9, ( <i>wk 6</i> ) F. 12 ( <i>wk 6</i> ) M. 12 ( <i>wk 7</i> )	LR8 HRLT LR8

### Options Classes

#### Michaelmas Term Options (OP1) Classes<sup>1</sup>

<sup>1</sup> Materials & Devices for Optics & Optoelectronics Class 1 (Workshop)	Class Lecturer		
Class 2	Dr S. Olakkil Veedu	M. 11-1 ( <i>wk 2</i> )	BRLT
Class 3	Prof. A.A.R. Watt	T. 10, W. 10, Th. 2 ( <i>wk 2</i> )	ETBCR
	Prof. A.A.R. Watt	W. 2, Th. 2, F. 2 ( <i>wk 3</i> )	ETBCR

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
<sup>1</sup> Magnetic and Superconducting Materials Class 3	Class Lecturer Dr M. Slota	M. 2, W. 3, F. 2 ( <i>wk 2</i> )	ETBCR
<sup>1</sup> Engineering Ceramics: Synthesis & Properties Class 3	Class Lecturer Prof. R.I. Todd	M. 2, Th. 4, F. 10 ( <i>wk 2</i> )	BRCR
<sup>1</sup> Prediction of Materials Properties Class 3	Class Lecturer Dr C.E. Patrick	M. 9, T. 2, Th. 11 ( <i>wk 2</i> )	BRCR
<sup>1</sup> Microstructural Control in Engineering Alloys Class 2	Class Lecturer Prof. K.A.Q. O'Reilly & Dr E. Liotti	M. 4, T. 10, Th. 9 ( <i>wk 2</i> )	BRCR
<b>Hilary Term Options (OP2)</b>			
<b>Classes <sup>1</sup></b>			
<sup>1</sup> Advanced Polymers Class 1	Class Lecturer Dr M. Forghani	M. 4, T. 2, Th. 4 ( <i>wk 6</i> )	ETBCR
Class 2	Dr M. Forghani	T. 2, Th. 4, F. 2 ( <i>wk 7</i> )	ETBCR
Class 3	Dr M. Forghani	Th. 9, Th. 4, F. 2 ( <i>wk 8</i> )	ETBCR
<sup>1</sup> Quantum Technology Class 1	Class Lecturer Prof. J.M. Smith	W. 4, Th. 4, F. 2 ( <i>wk 7</i> )	BRCR
Class 2	Prof. J.M. Smith	T. 2, Th. 2, F. 4 ( <i>wk 8</i> )	BRCR
Class 3	Prof. J.M. Smith	<i>tbc</i> (TT <i>wk1</i> )	<i>tbc</i>
<sup>1</sup> Biomaterials & Natural Materials Class 1	Class Lecturer Prof. J.T. Czernuszka	T. 9, T. 2, W. 2 ( <i>wk 7</i> )	BRCR
Class 2	Prof. J.T. Czernuszka	W. 2, Th. 11, F. 2 ( <i>wk 8</i> )	BRCR
<sup>1</sup> Enabling Nanotechnology: From Materials to Devices Class 1	Class Lecturer Prof. H. Bhaskaran	M. 2-5 ( <i>wk 7</i> )	ETBCR
Class 2	Prof. H. Bhaskaran	<i>tbc</i> (TT <i>wk1</i> )	ETBCR
<sup>1</sup> Materials for Nuclear Systems Class 1	Class Lecturer Prof. T.J. Marrow	T. 4, Th. 2, F. 4 ( <i>wk 6</i> )	BRCR
Class 2	Prof. D.E.J. Armstrong	T. 9, Th. 9, Th. 4 ( <i>wk 8</i> )	BRCR
Class 3	Prof. S. Lozano-Perez	<i>tbc</i> ( <i>wk 1 TT</i> )	<i>tbc</i>
<sup>1</sup> Energy Materials Class 1	Class Lecturer Prof. M. Pasta	T. 4, Th. 2, F. 2 ( <i>wk 6</i> )	ETBCR
Class 2	Prof. M.S. Islam	W. 4, Th. 2, F. 4 ( <i>wk 7</i> )	ETBCR
Class 3	Prof. R.S. Weatherup	T. 9, W. 11, Th. 2 ( <i>wk 8</i> )	ETBCR
<b>Other Lectures</b>			
Part II Open Day	Prof. H.E. Assender & Prof. J.T. Czernuszka	W. 2-5 ( <i>wk 6</i> )	BRLT
DPhil Poster Competition	Dr A.O. Taylor	W. 4.30-6.30 ( <i>wk 6</i> )	IEB Atrium
Industrial Visit	Dr E. Liotti	Th. 1-6 ( <i>wk 8</i> )	HRF
How to Obtain a Materials-related Summer Placement	Prof. T.J. Marrow	T. 12.15-1.15 ( <i>wk 1</i> )	HRLT
FHS Examination Briefing	Prof. T.J. Marrow	F. 11 ( <i>wk 8</i> )	HRLT

#### FOURTH YEAR

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
<b>Other Lectures</b>			
<sup>1</sup> Writing Skills, Plagiarism, Laboratory Notebooks, IPR & Patents	Prof. H.E. Assender & Dr P.J. Warren	F. 2-5 ( <i>wk 3</i> )	HRLT
Ethics & sustainability Workshop	S.P. Newbury & Others	T. 9.30-5, W. 9.30-3.30 ( <i>wk 6</i> )	HRMR
Presentation Skills: PowerPoint, Modern A/V Technology, PPT for Posters	Mr D. Baker (IT Services)	M. T. 1.30-4.30 ( <i>wk 2</i> )	IT Services
Practical Tips on Delivering a Research Talk	Dr A.O. Taylor	M. 3.30 ( <i>wk 5</i> )	HRLT
DPHil Poster Competition	Dr A. O. Taylor	W. 4.30-6.30 ( <i>wk 6</i> )	IEB Atrium

## POSTGRADUATES

**Please also see the Researcher Training area on the MPLS website:**

<https://www.mpls.ox.ac.uk/training/pgr/PGR>

### Postgraduate training

<sup>3</sup> Hydrofluoric Acid Safety	C. Foldbjerg-Holdway	W. 10 ( <i>wk 1</i> )	Via Teams
<sup>3</sup> Safe Handling of Compressed Gas Cylinders	C. Foldbjerg Holdway	W. 11 ( <i>wk 1</i> )	Via Teams
Writing Skills, Plagiarism, Laboratory Notebooks, IPR & Patents	Prof. H.E. Assender & Dr P.J. Warren	F. 2-5 ( <i>wk 3</i> )	HRLT
Teaching Skills: Tutoring Materials Science	Dr C.E. Patrick	Th. 2-5 ( <i>wk 3</i> ) <i>tbc</i>	BRCR
Presentation Skills: PowerPoint, Modern A/V Technology, PPT for Posters	Mr D. Baker (IT Services)	M. T. 1.30-4.30 ( <i>wk 2</i> )	IT Services
Practical Tips on Delivering a Research Talk	Dr A.O. Taylor	M. 3.30 ( <i>wk 5</i> )	HRLT
Poster Competition	Dr A.O. Taylor	W. 4.30-6.30 ( <i>wk 6</i> )	IEB Atrium
2 <sup>nd</sup> Year DPhil Talks	Drs A.O. Taylor <b>+ All Academic Staff</b>	M.T. W. Th. 10-6 ( <i>wk 7</i> ) F. 10-6 ( <i>wk 7</i> )	BRLT HRLT
Academic Writing (for Overseas students)	<i>tbc</i> (OULC)	<i>tbc</i>	<i>tbc</i>

### Postgraduate lecture courses

Spectroscopy with (S)TEM	Dr A Mostaed, Prof. R.J. Nicholls & Prof. S. Lozano-Perez	W.2, F. 10 ( <i>wks 1-3</i> ) Th. 11 ( <i>wks 1-2</i> )	BRLT
Imaging and Diffraction in (S)TEM	Dr J.S. Kim & Dr N.P. Young	M. 10, T. 12 ( <i>wks 2-5</i> )	BRLT

### <sup>2</sup>Hilary Term Options (OP2) Lectures

See HT Third Year, above

### Research colloquia

Materials Colloquia		Th. 3:30-5pm ( <i>wks 1,3,5,8</i> )	HRLT
Modelling Seminars		T. 2 ( <i>wk 6</i> ) <i>Others tbc</i>	HRLT

<sup>1</sup> Students attend one class in each set and need to register for a specific class – details on how to do this are in the Option Course Synopsis and on Canvas.

<sup>2</sup>This course is also offered to undergraduates as a 3<sup>rd</sup> year option. All postgraduates are welcome to take the lecture course (but are not able to attend the classes). They may select it as one of the two assessed courses in the first year provided they have not already taken the course as an undergraduate.

<sup>3</sup> Contact Christina Foldbjerg Holdway for details and an invitation:  
[christina.foldbjerg@materials.ox.ac.uk](mailto:christina.foldbjerg@materials.ox.ac.uk)

## UNDERGRADUATE TEACHING LAB PRACTICAL SCHEDULES FOR HILARY TERM 2024

Senior Demonstrators and their Deputies are reminded that they are required to be in the Department on the days their practicals are scheduled

HT Wk	YEAR 1 (Thur, Fri)
1 2	1P5, Bubble Raft ( <b>JMS</b> , SCB)
3 4	1P6, Thermal Analysis ( <b>E Liotti</b> , KAQOR)
5 6	1P7, Polymers – Molecular Weight Effects ( <b>NG</b> , JMS)
7 8	1P8, Electrode Potentials ( <b>Y Sun</b> , MP)

HT Wk	YEAR 2 (Mon, Tue, Wed)
1 2	2P5, Mechanical Properties of Polymers ( <b>HB</b> , AARW)
3 4	2P6, Dislocations & Plasticity ( <b>MRC</b> , JTC)
5 6	2P7, Corrosion ( <b>Z Wang</b> , MP)
7 8	2P8, Diffusion ( <b>TJM</b> , CRMG)