

# DEPARTMENT OF MATERIALS

## DIVISION OF MATHEMATICAL, PHYSICAL AND LIFE SCIENCES

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### LECTURE LIST FOR HILARY TERM 2020

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NOTICE: Attention is drawn to the provisions of the University's decrees, Ch. X, Sect. XI (*Statutes, Decrees, and Regulations*, 2000, pp. 761-63), under which non-members of the University, with certain stated exemptions, may not attend university lectures (unless they are announced as open to the general public) without the payment of a fee, otherwise than by the personal invitation of the lecturer concerned. Persons who are neither reading for a qualification of this University nor otherwise exempt, and who wish to attend lectures in any term, should apply to the Fees Clerk, University Offices, Wellington Square, Oxford OX1 2JD, for details of fees. Senior visiting scholars from other universities who wish to attend lectures, seminars, or classes should normally apply to the lecturer concerned, and not to the Fees Clerk.

Lectures begin on the first possible day after the beginning of Full Term (Sunday, 19 January) unless otherwise stated

**All lectures begin on the hour and finish at five minutes before the next hour.**

### 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
LR8 IEB	Lecture Room 8, Information Engineering Building
LR3 Thom	Lecture Room 3, Thom Building (Engineering)
ETBCR	ETB Committee Room, Engineering Technology Building
BRCR	Banbury Road Conference Room, 21 Banbury Road
HBTL	Holder Building Teaching Labs, Holder Building
HRF	Hume-Rothery Foyer, Hume-Rothery Building
RR	Rex Richards Meeting Room, Rex Richards Building

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
<b>FIRST YEAR</b>			
Computing for Materials Science	Prof. J.R. Yates	T. 9-12 ( <i>wks 2-3</i> )	LR3 Thom Building
Looking to the Future: Career Planning	Dr A. Evans (OUCaS)	T. 2.15-3 ( <i>wk 2</i> )	HRLT
Engineering Drawing Classes	Mr P. Bailey	F. 2-5 ( <i>wks 1&amp;3 OR 2&amp;4</i> )	Engineering Design Office, ETB
Practical Class Meeting	Prof. S. Lozano-Perez	M. 11 ( <i>wk 1</i> )	HRLT
Practical Classes	Various staff	Th. F. 2-5 ( <i>wks 1-8</i> )	HBTL
How to Obtain a Materials-related Summer Placement	Dr A.O. Taylor	T. 12.15-2 ( <i>wk 1</i> )	HRLT
Errors in Measurement	Prof. J.M. Smith	M. 3 ( <i>wk 2</i> )	HRLT
JCCU 2- Way Feedback	JCCU Reps	W. 10 ( <i>wk 7</i> )	BRLT
Feedback on Collections	Tutorial Fellows	W. 2-4 ( <i>wk 3</i> )	As advised by tutor
Update on the Radcliffe Science Library	Physical Sciences Subject Librarian	W. 12 ( <i>wk 4</i> )	LR2 Thom Building

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
<b>Materials Science 1: Physical Foundations of Materials</b>			
Electromagnetic Properties and Devices	Prof. S.C. Speller	M. 10 W. Th. F. 11 (wk 2) M. W. Th. F. 11 (wk 3) W. Th. 11, F. 11-1 (wk 4)	HRLT
Random Processes & Statistical Physics	Prof. R.S. Weatherup	M. Th. 11 (wks 5-6) W. 11 (wk 5) W. 11 (wk 6) M. 11 (wk 7) Th. 11 (wk 7)	HRLT BRLT HRLT HRLT BRLT
Wave Mechanics, Quantum Theory and Bonding	Dr R.J. Nicholls & Prof. P.D. Nellist	T. 2, Th. 12, F. 12 (wk 6) T. Th. 12 (wk 7) F. 12 (wk 7) W. Th. 12 (wk 8)	HRLT BRLT HRLT HRLT
<b>Materials Science 2: Structure and Mechanical Properties of Materials</b>			
Defects in Crystals	Dr P. Chen	M. W. Th. F. 12 (wks 1,3)	HRLT
Structures of Crystalline and Glassy Materials	Prof. M.L. Galano & Prof. K.A.Q. O'Reilly	M. 12, Th. 12 F. 12 (wk 2)	HRLT
Crystallography Classes	Dr E. Darnbrough & Dr P. Chen	T. 9-12 (wks 4,6,8)	LR3 Thom Bldg
<b>Materials Science 3: Transforming Materials</b>			
Electrochemistry	Prof. M. Pasta	M. W. Th. F. 9 (wk 6) M. F. 9 (wk 7) W. Th. 9 (wk 7)	HRLT HRLT BRLT
<b>Mathematics for Materials Science</b>			
Taylor Series and Limits	Dr N. Ares	M. Th. F. 9 (wk 1)	HRLT
Integration & Complex Numbers	Dr A.W. Robertson	M. Th. F. 9 (wks 2-4)	HRLT
Ordinary Differential Equations	Dr N. Ares	M. Th. F. 9 (wk 5) M. W. 12 (wk 6) M. 12 (wk 7)	HRLT HRLT
<b>SECOND YEAR</b>			
<b>1. Structure and Transformation of Materials</b>			
Microstructures of Polymers	Dr G. Matthews	T. 9 W. 10 (wks 5-6)	BRLT
Corrosion & Protection	Prof. S. Lozano-Perez	W. 10 Th. 11 (wks 1-4)	BRLT
<b>2. Electronic Properties</b>			
Electronic Structure of Materials	Dr C.E. Patrick	T. F. 10 (wks 1-3) Th. 10 (wks 1-2)	BRLT
Semiconductor Materials	Dr M.U. Rothmann	M. 9, T. 10, F. 10 (wks 5-6)	BRLT
<b>3. Mechanical Properties</b>			
Fracture	Prof. R. I. Todd	M. 10 W. 9 (wks 1,3-4) F. 9 (wks 1,3)	BRLT
Creep	Prof. R. I. Todd	Th. 9 (wks 4-5) M. 10, W. 9 (wk 5)	BRLT
Mechanical Properties of Polymers	Prof. H. E. Assender	M. Th. 10 (wks 6-7)	BRLT
<b>4. Engineering Applications of Materials</b>			
Microstructural Characterisation of Materials (from MT19)	Dr N.P. Young	W. 12 (wk 1)	BRLT
Semiconductor Devices	Dr R.S. Bonilla	M. 9, T. 10, F. 10 (wks 7-8)	BRLT

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
<b>Other Lectures</b>			
Entrepreneurship/ Business Plan (Lecture)	Dr S.M. Wilkinson	M. 10-12 ( <i>wk 2</i> ) Th. 2-4 ( <i>wks 4,6</i> )	BRLT
Entrepreneurship/ Business Plan (Lecture)	S.P. Newbury	F. 2-4 ( <i>wk 2</i> )	BRLT
Entrepreneurship/ Business Plan (Workshop Tutorial)	Dr S.M. Wilkinson	Th. 2-3.30 ( <i>wk 1</i> ) Th. 2-3.30 ( <i>wks 3,5,7</i> )	BRLT BRCR
Practical Class Meeting	Prof. S. Lozano-Perez	M. 9.30-10 ( <i>wk 1</i> )	BRLT
Industrial Visit	Dr E. Liotti	F. 1-6 ( <i>wks 6 and 7</i> )	HRF
Practical Classes	Various staff	M. T. W. 2-5 ( <i>wks 1-8</i> )	HBTL
How to Obtain a Materials- related Summer Placement	Dr A.O. Taylor	T. 12.15-2 ( <i>wk 1</i> )	HRLT
Tata Steel Industrial Lecture, Prize-giving & Lunch	HoD & Tata Steel Representative	Th. 12-2 ( <i>wk 3</i> )	BRCR
JCCU 2-Way Feedback	JCCU Reps	W. 11 ( <i>wk 6</i> )	BRLT
Feedback on Collections	Tutorial Fellows	F. 2-4 ( <i>wk 3</i> )	As advised by tutor
Poster Competition	Prof. S. Lozano-Perez & Others	F. 4-6 ( <i>wk 1</i> )	HB Café
Update on the Radcliffe Science Library	Physical Sciences Subject Librarian	W. 12 ( <i>wk 4</i> )	LR2 Thom Building
<b>Supplementary Subjects</b>			
History and Philosophy of Science: The Origins of Science	Dr S. Allen	M. 12 ( <i>wks 1-8</i> )	Examination Schools
Quantum Chemistry	Prof. W. Barford & Prof. J.E. McGrady	T. F. 11 ( <i>wks 1-7</i> )	PTCL
<b>THIRD YEAR</b>			
<sup>1</sup> Introduction to Modelling in Materials Science (two-week module)	Prof. R. Drautz & Prof. J.R. Yates	M-F. 9-5 ( <i>wks 1-2</i> )	BRCR
<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> ) see timetable issued by module organisers for locations	Lectures - IEB LR8 Practical work – location varied
<b>Hilary Term Options (OP2) Lectures</b>			
Advanced Polymers	Prof. H.E. Assender & Dr M. Lefferts	W. 12 ( <i>wks 5-7</i> ) Th. 10 ( <i>wks 3-5,7</i> ) F. 9 ( <i>wks 3-7</i> )	LR8
Devices	Prof. C.R.M. Grovenor, Prof. S.C. Speller & Prof. P.R. Wilshaw	M. 9, W. 10, Th. 12 ( <i>wks 3-4</i> ) W. 10, Th. 12 ( <i>wks 5-7</i> )	LR8
Biomaterials & Natural Materials	Prof. J.T. Czernuszka	T. 12 ( <i>wks 3-4,6,8</i> ) F. 12 ( <i>wks 3-7</i> ) T. 12 ( <i>wks 5,7</i> ) W. 11 ( <i>wk 8</i> )	HRLT LR8 LR8 LR8
Advanced Engineering Alloys & Composites	Prof. M.L. Galano & Prof. D.E.J. Armstrong	M. 11 ( <i>wks 3-7</i> ) F. 10 ( <i>wks 3-6</i> ) T. 11 ( <i>wks 5,7</i> ) T. 11 ( <i>wk 6</i> )	LR8 LR8 LR8 HRLT

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
Materials for Energy Production, Distribution & Storage	Prof. T.J. Marrow & Dr P. Adamson	M. 12 (wks 3,6-7) T. 9 (wks 3-4,6) T. 9 (wks 5,7) W. 9 (wks 3-6)	LR8 HRLT LR8 LR8
<b>Options Classes</b>			
<b>Michaelmas Term Options (OP1) Classes<sup>1</sup></b>			
<sup>1</sup> Materials & Devices for Optics & Optoelectronics	Class Lecturer		
Class 3		M. 2, Th. 9, Th. 4 (wk 3)	BRCR
<sup>1</sup> Nanomaterials	Class Lecturer		
Class 3		M. 2, T. 2 (wk 4)	ETBCR
<sup>1</sup> Engineering Ceramics: Synthesis & Properties	Class Lecturer		
Class 3		M. 4, W. 4, F. 2 (wk 3)	BRCR
<sup>1</sup> Prediction of Materials Properties	Class Lecturer		
Class 3		M. 10, W. 11, F. 4 (wk 3)	BRCR
<sup>1</sup> Advanced Manufacture with Metals & Alloys	Class Lecturer		
Class 2		T. 10, W. 2 (wk 3)	BRCR
<b>Hilary Term Options (OP2) Classes<sup>1</sup></b>			
<sup>1</sup> Advanced Polymers	Class Lecturer		
Class 1		F. 2 (wk 6) M. 2, T. 2 (wk 7)	BRCR
Class 2		M. 11, T. 10, W. 2, (wk 8)	BRCR
Class 3		M. 11, T. 2, W. 11 (wk 1 TT)	BRCR
<sup>1</sup> Devices	Class Lecturer		
Class 1		T. 2, W. 4, F. 4 (wk 6)	BRCR
Class 2		M. 4, T. 4, W. 2 (wk 1 TT)	BRCR
<sup>1</sup> Biomaterials & Natural Materials	Class Lecturer		
Class 1		Th. 9, Th. 4, F. 11 (wk 8)	BRCR
Class 2		T. 11, Th. 2, F. 11 (wk 1 TT)	BRCR
<sup>1</sup> Advanced Engineering Alloys & Composites	Class Lecturer		
Class 1		W. 2, Th. 4, F. 10 (wk 7)	BRCR
Class 2		W. 9, Th. 10, Th. 4 (wk 1 TT)	BRCR
<sup>1</sup> Materials for Energy Production, Distribution & Storage	Class Lecturer		
Class 1		M. 2, T. 4, W. 2 (wk 6)	BRCR
Class 2		M. 4, T. 2, W. 9 (wk 8)	BRCR
Class 3		M. 2, T. 9, W. 4 (wk 1 TT)	BRCR

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
<b>Other Lectures</b>			
Part II Open Day	Prof. A.J. Wilkinson & Prof. K.A.Q. O'Reilly	T. 2-5 (wk 3)	HRLT
DPhil Poster Competition	Dr A.O. Taylor	W. 5-6.30 (wk 6)	Holder Café
Industrial Visit	Dr E. Liotti	F. 1-6 (wks 6 and 7)	HRF
How to Obtain a Materials-related Summer Placement	Dr A.O. Taylor	T. 12.15-2 (wk 1)	HRLT
JCCU 2-Way Feedback	Year Reps	W. 12 (wk 8)	IEB LR8
Update on the Radcliffe Science Library	Physical Sciences Subject Librarian	W. 12 (wk 4)	LR2 Thom Building
<b>FOURTH YEAR</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 (wk 3)	HRLT
Ethics & Sustainability Workshop	S.P. Newbury & Others	M. T. 12.30-5 (wk 6)	HRMR
Presentation Skills: PowerPoint, Modern A/V Technology, PPT for Posters, Practical Tips	Mr D. Baker (IT Services) & Dr A.O. Taylor	M. T. 2-5 (wk 8)	IT Services
Tata Steel Industrial Lecture, Prize-giving & Lunch	HoD & Tata Steel Representative	Th. 12.-2 (wk 3)	BRCR
Materials Colloquia		Th. 4 (wks 1, 3, 5, 8)	HRLT
DPhil Poster Competition	Dr A. O. Taylor	W. 5-6.30 (wk 6)	Holder Café
Update on the Radcliffe Science Library	Physical Sciences Subject Librarian	W. 12 (wk 4)	LR2 Thom Building
<b>POSTGRADUATES</b>			
Please also see the Researcher Training sub-site on WebLearn, <a href="https://weblearn.ox.ac.uk/portal/hierarchy/grad">https://weblearn.ox.ac.uk/portal/hierarchy/grad</a>			
<b>Postgraduate training</b>			
Safety (Compulsory for all new research workers)	I.P. Bishop	T. 10 (wk 1)	HRLT
Hydrofluoric Acid Safety	I.P. Bishop & C. Foldbjerg-Holdway	T. 11 (wk 1)	HRLT
Writing Skills, Plagiarism, Laboratory Notebooks, IPR & Patents	Prof. H.E. Assender & Dr P.J. Warren	F. 2-5 (wk 3)	HRLT
Presentation Skills: PowerPoint, Modern A/V Technology, PPT for Posters, Practical Tips	Mr D. Baker (IT Services) & Dr A.O. Taylor	M. T. 2-5 (wk 8)	IT Services
Poster Competition	Dr A.O. Taylor	W. 5-6.30 (wk 6)	Holder Café
Teaching Skills: Materials Options Classes	Prof. M.L. Galano	F. 2-5 (wk 5) <b>tbc</b>	BRCR
2 <sup>nd</sup> Year DPhil Talks	Drs A.O. Taylor & J.L. Hutchison <b>+ All Academic Staff</b>	T. W. Th. 10-6 (wk 7)	HRLT

<b>Subject</b>	<b>Lecturer</b>	<b>Time</b>	<b>Place</b>
Academic Writing (for Overseas students)	Dr M. D'Angeli	M-F 2-4 (wk 9)	Language Centre
Tata Steel Industrial Lecture, Prize-giving & Lunch	HoD & Tata Steel Representative	Th. 12-2 (wk 3)	BRCR
Update on the Radcliffe Science Library	Physical Sciences Subject Librarian	W. 12 (wk 4)	LR2 Thom Building
<b>Postgraduate lecture courses</b>			
Early Metallurgy	Mr C.J. Salter	F. 11 (wks 1-8)	BRLT
Spectroscopy with (S)TEM	Prof. J.M Titchmarsh, Dr R.J. Nicholls & Prof. S. Lozano-Perez	W. 10 (wks 1-3) T. 10 (wks 2-4) Th. 2 (wk 4) T. 11 (wk 5)	HRLT HRLT HRLT BRLT
Imaging and Diffraction in (S)TEM	Dr C. Huang & Dr N.P. Young	Th. 10 (wks 1-5) M. 10 (wk 4-6)	HRLT
<b><sup>1,2</sup>Hilary Term Options (OP2) Lecture &amp; Classes</b>	See HT Third Year, above		
<sup>2</sup> Introduction to Modelling in Materials Science (two-week module)	Prof. R. Drautz & Prof. J.R. Yates	M-F. all day (wks 1-2)	BRCR
<b><sup>3</sup>Modular training courses in electron microscopy</b>			
Focussed ion-beam milling (FIB)	Dr G.M. Hughes	tbc	Contact EM Facility <sup>5</sup>
Analysis of HREM Images	Dr N.P. Young	tbc	Contact EM Facility <sup>5</sup>
<b>Research colloquia</b>			
Materials Colloquia		Th. 3:30-5pm (wks 1,3,5,8)	HRLT
QIP Seminars		tbc	Phrontisterion
Modelling Seminars		F. 1.30-3 (wks 2,4,6,8)	HRLT

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

<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 course. 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. Places on the Introduction to Materials Modelling module are very limited – PGR should contact Prof J.R. Yates if they are interested in taking this module.

<sup>3</sup>Places on these courses are limited. Please apply to [emaccess@materials.ox.ac.uk](mailto:emaccess@materials.ox.ac.uk) at least 2 weeks before the scheduled start date, which is advertised on the EM Group web-site: <http://www-em.materials.ox.ac.uk>. Please direct any enquiries to [Dr Neil Young](#).

## UNDERGRADUATE TEACHING LAB PRACTICAL SCHEDULES FOR HILARY TERM 2020

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, Polymers – Molecular Weight Effects ( <b>AARW</b> , HEA)
3 4	1P6, Thermal Analysis ( <b>E Liotti</b> , KQOR)
5 6	1P6, Bubble Raft ( <b>SCB</b> , tbc)
7 8	1P8, Electrode Potentials ( <b>X Xu</b> , PRW)

HT Wk	YEAR 2 (Mon, Tue, Wed)
1 2	2P6, Extrusion ( <b>M Danaie</b> , AJW)
3 4	2P1, Diffusion ( <b>TJM</b> , MLG)
5 6	2P7, Corrosion ( <b>J Haley</b> , TJM)
7 8	2P12, Semiconductor Devices ( <b>S Bonilla</b> , tbc)