

# Department of Mathematical Sciences

## Staff Handbook

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# 1 Departmental Organisation

The Department currently has 32 permanent academic staff plus 3 temporary lecturing staff. In addition there are 19 Senior Fellows and Honorary Senior Fellows who are involved in our research and teaching activities. Each belongs to one of the four research based divisions: Applied Mathematics, Pure Mathematics, Statistics and Operational Research, and Theoretical Physics. There is a Head of Department who is responsible to the Dean of the Faculty, thence to a Pro-Vice Chancellor and the Vice-Chancellor for the running of the Department. These personnel are currently:

Head of Department:	<a href="#">Professor P.J. Giblin</a>
Dean of the Faculty of Science:	Professor J.R. Saunders
Pro-Vice Chancellor:	Professor K.D. Everest
Vice-Chancellor:	Professor J.D. Bone.

Each of the four research divisions has a Head who is responsible for monitoring and managing research performance of each group. These are currently:

Applied Mathematics:	<a href="#">Prof. A.B. Movchan</a>
Pure Mathematics:	<a href="#">Prof. E.V. Flynn</a>
Statistics and Operational Research:	for 2003/04 <a href="#">Prof. A.B. Movchan</a>
Theoretical Physics:	<a href="#">Prof. A.C. Irving</a>

The current allocation of Departmental Administration is on the web:

<http://www.maths.liv.ac.uk/staff-only/>

Username and password are obtainable from the Departmental Webmaster, Vadim Biktashev, [ynb@liv.ac.uk](mailto:ynb@liv.ac.uk).

## 1.1 Academic Staff with Research Interests

### Applied Mathematics

[Prof. Peter Appleby](#) - Environmental Sciences. Dating lake and estuarine sediments using the natural radionuclide  $^{210}\text{Pb}$  and artificial radionuclides  $^{137}\text{Cs}$  and  $^{241}\text{Am}$ ; transport of fallout radionuclides through catchmentlake systems and their use as tracers in erosion and environmental pollution studies.

[Dr. Mike Ball](#) - Game Theory: coalition formation and the distribution of payoffs; the role of assessment. Use of game theory in mathematical biology, in particular in sperm competition.

[Dr Vadim Biktashev](#) - Nonlinear Science. Asymptotical methods. Autowaves and autowave vortices. Applications in biology: mathematical modelling for cardiology and population dynamics.

**Prof. Roger Bowers** - Mathematical biology with particular reference to population dynamics and epidemiology.

**Dr. Nigel Backhouse** - Representations of algebraic structures, motivated by applications in physics and to differential equations. Game theory, particularly the application of computer algebra to core and stable set structure.

**Dr. Ke Chen** - Computational partial differential equations, and boundary integral equations. Numerical methods and analysis. Iterative methods. Engineering applications: elasto-hydrodynamic lubrication, acoustic scattering, water waves, electrical power systems, coupling problems.

**Dr. David Hodgkinson** - Relativity, with particular reference to the classification of space-times by the embedding method.

**Dr. David Lewis** - Plankton population dynamics, Ocean turbulence and boundary-layers, Atmospheric dispersion.

**Dr. Duncan MacDonald** - Numerical analysis, with particular reference to the summation of series. Fluid mechanics.

**Prof. Alexander Movchan** - Singularly perturbed boundary value problems posed in multi-structures; integro-differential equations of the Peierls type; models of dislocations, dynamic cracks, and of anisotropic elasticity.

**Dr. Natasha Movchan** - Boundary value problems of elasticity in domains with conical points; hypersingular integral equations and applications in fracture mechanics; mathematical models of fracture in fibre-reinforced ceramic materials.

### **Senior Fellows and Honorary Senior Fellows**

For a list of current Senior Fellows and Honorary Senior Fellows please refer to the Department's webpage at <http://www.liv.ac.uk/math/People/index.html#hon>.

### **Pure Mathematics**

**Prof. Bill Bruce** - Singularity theory with applications to differential and algebraic geometry.

**Prof. Victor Flynn** - Number theory of higher genus curves and their Jacobians.

**Prof. Peter Giblin** - Applications of singularity theory to geometry and computer vision, computer graphics.

**Prof. Victor Goryunov** - Vassiliev type invariants of plane curves and Legendrian knots.

**Dr. Toby Hall** - Discrete dynamical systems.

**Dr. Adam Logan** – Algebraic number theory, especially Iwasawa theory and computational aspects of the geometry of curves; algebraic geometry, specifically birational geometry of moduli spaces and Brill-Noether theory.

**[Prof. Hugh Morton](#)** - Knot theory and low dimensional topology.

**[Dr. Kit Nair](#)** - Ergodic theory; arithmetic; Diophantine approximation and uniform distribution; Harmonic analysis and probability theory.

**[Prof. Peter Newstead](#)** - Algebraic geometry, particularly classification of vector bundles on algebraic curves.

**[Prof. Viacheslav Nikulin](#)** - Algebraic geometry.

**[Dr. Aleksandr Pukhlikov](#)** - Higher dimensional algebraic geometry; birational geometry; rationality problem.

**[Prof. Mary Rees](#)** - Complex dynamics and other dynamical systems especially with rigid geometric structure.

### **Senior Fellows and Honorary Senior Fellows**

For a list of current Senior Fellows and Honorary Senior Fellows please refer to the Department's webpage at <http://www.liv.ac.uk/math/People/index.html#hon>.

### **Statistics and Operational Research**

**[Prof. Raj Bhansali](#)** - Multiple time series; prediction; long-memory time series.

**[Dr. Damian Clancy](#)** - Stochastic epidemic modelling, optimal isolation/immunisation policies; models incorporating immigration and emigration of susceptibles; modelling of Neospora caninum in cattle.

**[Dr. Aleksey Piunovskiy](#)** - Optimal control for stochastic processes.

**[Dr. Kai Liu](#)** - Stochastic processes, stochastic differential equations and related topics.

### **Senior Fellows and Honorary Senior Fellows**

For a list of current Senior Fellows and Honorary Senior Fellows please refer to the Department's webpage at <http://www.liv.ac.uk/math/People/index.html#hon>.

### **Theoretical Physics**

**[Dr. John Gracey](#)** - Large N expansions; perturbative quantum field theory; applications of knot theory.

**[Prof. Alan Irving](#)** - Lattice gauge theory.

**Dr. Ian Jack** - Perturbative quantum field theory; supersymmetry; unified models.

**Prof. Tim Jones** - Perturbative quantum field theory; supersymmetry; unified models.

**Dr. John McDonald** - cosmology, astro-particle physics, supersymmetric models of particle physics.

**Prof. Chris Michael** - Lattice gauge theory.

**Dr. David Nolland** - non-perturbative QFT, Functional Schrodinger methods, AdS/CFT correspondence, string theory.

**Dr. Paul Rakow** - Lattice gauge theory; hadronic structure.

### Senior Fellows and Honorary Senior Fellows

For a list of current Senior Fellows and Honorary Senior Fellows please refer to the Department's webpage at <http://www.liv.ac.uk/math/People/index.html#hon>.

## 1.2 Telephone/E-mail addresses

The most up-to-date listing will be found on the departmental webpage:

<http://www.liv.ac.uk/math/HOME/people.html>

## 1.3 Support Staff

### Secretarial

Each of the four divisions within Mathematical Sciences has a divisional office and a secretary:

Applied Mathematics: **Joanna Seed** (M&O Bldg, 4<sup>th</sup> floor, room 416)  
Ext 44001, [seedj@liv.ac.uk](mailto:seedj@liv.ac.uk)

Pure Mathematics: **Frances Poole** (M&O Bldg, 5<sup>th</sup> floor, room 516)  
Ext 44043, [Frances.Poole@liv.ac.uk](mailto:Frances.Poole@liv.ac.uk)

Stats & OR: **Judi Young** (M&O Bldg, 2<sup>nd</sup> floor, room 201)  
Ext 44751, [jyoung@liv.ac.uk](mailto:jyoung@liv.ac.uk)

Theoretical Physics: **Jean Settle** (Chadwick Tower, 8<sup>th</sup> floor, room 807).  
Ext 43772, [settleje@liv.ac.uk](mailto:settleje@liv.ac.uk)

Each secretary provides assistance to the Head, staff, postgraduates and visitors of their Division. Responsibilities include:

- preparation of administrative documents/timetables/circulars/reports etc.
- monitoring accounts, staff /postgraduate/visitor expenses/claims
- payment of invoices, petty cash reimbursements
- staff travel bookings

- postgraduate enquiries
- examination administration
- visitors - hotel & restaurant reservations, accommodation & other queries

It has been agreed by the H.o.D. that a small amount of flexibility in working/office hours can be accommodated. This means that secretarial staff may arrive or leave up to half an hour early/late without prior consultation. More than this (up to an absolute maximum of 1 hour) requires prior consultation with their line manager. This is subject to staff keeping a log of working hours which is unlikely to be inspected, but must exist in case of need.

The Board of Studies office (see also Board of Studies in Mathematical Sciences), located on the 3<sup>rd</sup> floor also has a secretary. Currently there are two part-time secretaries Philippa Greene and Karen Hurst. Karen is available on Mondays and Tuesdays and Philippa from Wednesday to Friday.

**BSMS Office:**            **Philippa Greene & Karen Hurst**  
 (M&O Bldg, 3rd floor, rooms 308,309, 310b)  
 Ext 44046, [bsms@liv.ac.uk](mailto:bsms@liv.ac.uk)

### **Technical**

The department has two technical staff who deal with computing resources and should be contacted via e-mail:

**Mr Dave Ford**  
 Hardware, Photocopiers, Safety Officer  
 (M&O Bldg, 2<sup>nd</sup> floor, room 215)  
 Ext 44744, [fordy@liv.ac.uk](mailto:fordy@liv.ac.uk)

**Mr Steve Downing**  
 Software  
 (M&O Bldg, 2<sup>nd</sup> floor, room 215)  
 Ext 44744, [steved@liv.ac.uk](mailto:steved@liv.ac.uk)

All staff have either a networked pentium PC in their office which runs windows NT or linux or a unix workstation. Printers, email, world wide web and central and Departmental servers can be accessed over the network. In addition to the central university services (Windows NT and SUN/Solaris) there are three research clusters available to staff and research students: in Theoretical Physics (mainly SUN), Statistics and Operational Research (SUN), and Pure Maths (Silicon Graphics). The department also has a number of powerful Sun workstations and Linux PCs for running applications such as Matlab, Mathematica and Splus.

### **Building Manager**

The M&O building has the services of a building manager, Mr. Paul Crichton. He is based in the porters lodge by the main entrance to the building and can be contacted on ext 44085 or by email at [P.D.Crichton@liv.ac.uk](mailto:P.D.Crichton@liv.ac.uk). Paul is responsible for general security, cleaning the black boards in the lecture theatres, alerting staff to deliveries and acts as deputy fire office for Mr. Dave Ford.

## 1.4 Administrative procedures

### 1.4.1 Telephones

The telephone in your room is suitable for receiving directly any external or internal call. For making internal calls you dial 4 before the ext you require. For making external calls you dial 9 before the number. The department has in previous years had a policy on external personal phone calls but Telephone Services changed this recording mechanism and it has yet to be replaced. All staff are politely instructed not to abuse the system by making excessive use of the telephone for personal calls. All personal calls other than local calls must be reimbursed to the department. Telephone statements are printed each month and sent to each divisional office with an itemised breakdown of the charges for each extension number in the entire department.

Most offices have a telephone directory listing all staff and departments currently in the University of Liverpool. The last directory to be produced was in 2000 and it is expected that a revised version will be produced in Spring 2003. There is however, an on-line directory at [www.liv.ac.uk/cgi-bin/people](http://www.liv.ac.uk/cgi-bin/people) which is active and searchable.

For staff wishing to use the BT Directory Enquiries service. You should first dial 100 for the University's switchboard with your query. They will either be able to help you there and then or simply transfer your call to directory enquiries to deal with. Note that BT Phonedisk is available via the Library's CD Rom service.

### 1.4.2 Voicemail

Most office telephones in the Department are connected to the University's voice mail system. This is a digital message service which can be accessed by staff from within the University or by dialling up voice mail from an outside line. The voice mail number is **43939** from a University phone and **794 3939** for dialling from outside of the University. You will be prompted for your phone extension number followed by your PIN number. The default is your 5 digit extension number. Once you have entered this you can pick up your messages. To indicate that you have messages, voice mail will make your handset give two short rings in quick succession every 20 minutes until you pick up your messages.

### 1.4.3 Fax

There are currently 2 fax machines in the M&O building for use, located in the Statistics general office on the 2<sup>nd</sup> floor (**794 4754**) and in the Pure Mathematics office on the 5<sup>th</sup> floor (**794 4061**). There is also a fax machine in the Theoretical Physics general office, located in Chadwick Tower on the 8<sup>th</sup> floor (**794 3784**). Incoming faxes will be placed in your pigeonhole. There are fax cover sheets provided for staff to use and the fax machine in Pure Mathematics also has a list of all international dialling codes next to it for reference.



## 1.4.4 Email

Most staff use either Unix or Windows on their computers. The majority however will have access to Mulberry which is the standard email package supported by Computing Services and in use throughout the campus. There is basic documentation on how to use Mulberry available from the CSD website at [www.liv.ac.uk/CSD](http://www.liv.ac.uk/CSD) using their documentation link. Pine (via UNIX) is also a supported email package.

There are several different email lists in the Department and these are listed below for your convenience. These lists are administered using Listserv software and only certain staff have authorisation to add and remove names from the lists. These staff include the divisional secretaries. New members of staff are automatically added to the **mathscistaff** list and then usually the divisional group mailing list. If you require admission to any other lists you must make this known to your divisional office who can make arrangements for your name to be added.

Students are assigned to a mailing list dependent on their programme of study and year of study. For undergraduate students there are the following email lists:

**mathug** for all students  
**mathy1ug** for Year 0/1  
**mathy2ug** for Year 2  
**mathy3ug** for Year 3  
**g101-4-list** for Year 4

For taught MSc and research postgraduates there is a single list **mathpg**.

Divisional email lists are as follows:

**purmatstaff** for Pure Mathematics Division  
**apmathstaff** for Applied Mathematics Division  
**stcomastaff** for Statistics and Operational Research Division  
**theophysstaff** for Theoretical Physics Division

All announcements, seminars, news, meetings, circulars etc. are routinely sent via email. It is vital that you are registered for the correct lists so that you don't miss out on any departmental events or meetings. Staff should check their email daily.

Staff may be interested to know that they can access their emails via the webmail service. The University's mail server can be accessed via **webmail.liv.ac.uk** you will simply be prompted for your username and then your password. CSD has full documentation on how to use this service, although it is very similar to the standard email packages. Note that this facility is available from any internet service world wide.

## 1.4.5 Photocopying

There are currently two photocopiers in the M&O building and one in Chadwick Tower. These are located next to the general office on the 4<sup>th</sup> and in room 210 on the 2<sup>nd</sup> floor of the M&O building and on the 8<sup>th</sup> floor of Chadwick Tower. On arrival

you will be given a PIN for use of the machines. Your PIN can be used with any machine in Mathematics. Please remember that departmental photocopying always has priority over private work or work for outside organisations. Private photocopying costs 3p per page. A book for logging this is placed close to the machines in the M&O building.

#### **1.4.6 Recycling**

The University has for a number of years encouraged departments to use the recycling service set up by Operational Services wherever possible. To that end, if you have papers for recycling you should inform your divisional secretary who will put in a fax request for a collection. Failing this, you can always inform the building manager, **Paul Crichton** on ext **44085**, or by email to [P.D.Crichton@liverpool.ac.uk](mailto:P.D.Crichton@liverpool.ac.uk).

#### **1.4.7 Confidential Waste Disposal**

The University offers a confidential waste disposal service for any staff who need to safely and securely dispose of confidential papers. These could include minutes of meetings, UCAS application forms and any other documents which should not simply be put into the recycling bags. If you have any such materials, you should let your divisional office know. The University collects confidential waste each Thursday during term time and can be contacted for advice on disposal of documents if there is uncertainty over the use of this service.

#### **1.4.8 Postage**

Internal and external mail is delivered each day to your pigeon hole (in your divisional office). Outgoing mail is collected at 3.00 p.m. from your divisional office. It must be stamped with the account number before collection. It is essential that outgoing “official” external mail is put in a pre-paid envelope and stamped with the division’s code. However pre-addressed envelopes can also be used provided the account number is stamped on the envelope. Special pre-paid envelopes are available within your divisional office.

Private mail should be dealt with via the nearest Post Office (corner of Peach Street/Brownlow Hill), and **not** through the university system. Pre-paid envelopes cannot be used in Post Offices, only via the University mail room.

Staff are instructed to use second class post for sending out mail wherever practically reasonable. Exceptions include the mailing of urgent items and overseas airmail items which must always be sent via first class.

It is also possible for special cases such as the sending of external examination papers or research grant applications, to use the DHL courier service offered via the University mailroom located in the basement of Senate House. You will be asked to complete a form detailing the person you are sending the mail to, the nature of the contents e.g. research materials and the type of service you require e.g. 24 hour next day delivery. In order to use this service you will need to obtain a departmental account code or you will not be able to send your mail. You can obtain this from your

divisional office. The deadline for mail using the courier service is 2:45 p.m. It is advisable to get to the mailroom in plenty of time as many other staff could be queuing for the same service.

### **1.4.9 Stationery**

Supplies of stationery can be obtained via your divisional office. Judi Young is the departmental contact for any stationery queries or requests for unusual items. She can be contacted on ext 44751 or by email at [jyoung@liv.ac.uk](mailto:jyoung@liv.ac.uk). For your information, stationery items are ordered weekly each Tuesday. Any staff who have made special requests for items will be notified once they are delivered from central stores. It is good practice to inform Judi if you have taken the last of any particular item held in the stationery room so that she can make sure it is replaced in the following week's ordering.

### **1.4.10 Rooms and Room Keys**

Rooms are allocated via the Head of Department and a key for your office will be issued on arrival. Staff and postgraduates have access to the general office (1101 key) and you will be given key codes for the copying rooms (417 and 210) and the computer rooms (302, 209). To obtain a swipe card for after hours access to the building you will need to fill in an authorisation form and hand it in to the office, room 516. **Staff and students are advised to keep rooms locked whenever they are empty, however short the period of time.** Keys are also available for staff wishing to use the small car park next to the M&O building from Mrs. Natasha Davies (room 516), M&O Building who can issue them immediately. (A card entry system is expected to replace keys in 2003.)

### **1.4.11 Room bookings**

Booking of lecture/seminar rooms for the Mathematics & Oceanography building (other than 027 and 029) must be made via Judi Young (room 201). Rooms 027, 029 and other university room bookings are co-ordinated via Operational Services, Mrs. Anita Bartley (x42035). If events fall outside normal office hours, it is necessary to make sure the relevant building manager will be on duty during the period of the event. Booking forms can be obtained via divisional offices. Provision of security cover outside normal hours has to be paid for.

## **1.5 Departmental Computing resources**

Staff requiring accounts on any of these systems should contact the computing officer Mr Steve Downing.

The University Windows 2000 service gives access to a suite of applications and the common Microsoft software. See <http://pcwww.liv.ac.uk/w2ksapps.htm>

There are also common computing resource rooms, M&O building Room 302, which is a departmental PC centre; Room 209, a departmental unix and Silicon Graphics

centre; Room 102, a teaching centre for staff and students; Chadwick 806, computing resources for Theoretical Physics. Help with computing can be given either by the central helpdesk or the department's computing officer. Staff or students can register to use the central University systems by visiting the Help Desk in Building 31 or by self-registration from any Teaching Centre.

The department computing facilities are constantly upgraded and are close to the leading edge of technology in both hardware and software. Computing resources are flexible and can be tailored to individual requirements if requested. The quality of departmental and divisional resources is maintained by successful research grant applications. Everyone applying for a research grant should if possible ask for a contribution towards the maintenance of the network. Ask any member of Research Committee for advice.

Further information on provision of computing equipment can be found on the departmental web pages, and this handbook, under 'Equipment Committee'. In particular you can find there guidelines on ordering of new equipment and reporting of faults.

## **1.6 Departmental Committees**

### **1.6.1 Departmental Management Committee**

Members are Peter Giblin (Head of Department and Chair), Alan Irving (TP), Victor Flynn (PM) and Sasha Movchan (AM & SOR) (Heads of Division), Dave Hodgkinson (Chair of Board of Studies of Mathematical Sciences), Toby Hall (Chair, Learning and Teaching Committee) and Chris Michael (Chair of Research Committee).

The other Committees report to Management Committee which meets as necessary to discuss any matters of significance to the Department.

### **1.6.2 Equipment and Resources Committee**

There are 5 members of the Equipment and Resources Committee:

Peter Appleby	Chair
Adam Logan	Secretary and Representative for Pure Maths Division
Vadim Biktashev	Representative for Applied Maths Division
Paul Rakow	Representative for Theoretical Physics Division
Kai Liu	Representative for Statistics and Operational Research Division; Library Representative
Steve Downing	Computer Officer

They are responsible for all matters (e.g. purchase, maintenance) concerning equipment (e.g. computer hardware, software, audio visual aids). They also check on the provision of research texts and textbooks in the library and collect information on other resources such as software which might be provided for staff or students in the Department.

Equipment and Resources Committee covers purchase of any equipment paid for out of:

departmental equipment funds  
personal grants (e.g. research grants)

It also covers equipment provided by, or on loan from, other departments.

For further details, see [http://www.liv.ac.uk/math/EQUIP\\_COMM/](http://www.liv.ac.uk/math/EQUIP_COMM/)

### **Technical advice**

Before initiating an order for **any** equipment destined for use within the department, it is expected that colleagues will wish to take advantage of the expertise of our technical staff. This is so that appropriate advice can be given, if required, and that future maintenance, technical support and other related issues can be clarified in advance. For orders using departmental equipment funds, this action is mandatory. For other orders, it is highly recommended since further technical support cannot otherwise be guaranteed.

### **Price quotations**

For departmental orders for any individual item costing £300 or more, some form of written quotation is required. This may be a fax or e-mail but must make clear that the price agreed refers to the order in question. For example, an undated price list is not acceptable.

### **Placing and recording orders**

Following the above consultation, ALL orders (including those to be paid for out of research grants) must be placed through a divisional secretary. Normally this should be Mrs. Seed who keeps a record of all purchases made (in a 'blue book'). A signature from a relevant responsible individual (see below) is required along with relevant equipment details.

### **Departmental equipment fund**

In this case, one of the technical staff must complete the 'blue book' entries and provide an initial signature. For 'non-routine' or expensive items, initial approval (E-mail) of the Chair of the Equipment Committee is required. The latter should be asked to initial all entries in the blue book from time to time to verify the order as official and to keep track of the current definition of 'routine' orders. Any order raising concerns of any kind is defined to be non-routine and the Chair of the Equipment Committee should be consulted.

### **Other orders**

Mrs. Seed orders all equipment on behalf of personnel in the M&O building. The signature details for entry (in a separate 'blue book') will be supplied by the initialling individual who will also supply details of the account to be debited. Non-departmental orders originating in TP (i.e. not in the M&O building) may be made through Mrs. Settle who also keeps a record of orders. The ordering coordinator (Mrs. Seed) and the inventory coordinator (Mr. Ford) are asked to liaise with each other on

a regular basis and with the other secretaries (especially TP) to ensure their records are reasonably up-to-date.

### **Other new equipment**

It is essential that the department has an up-to-date inventory of **all** equipment used in the department. Members who acquire equipment from other sources or have equipment on loan from other departments are asked to notify Mr. Ford so that the records may be amended.

### **Furniture**

Staff who require any furniture should liaise with Dave Ford. For the purchase of new furniture or special items, Dave can discuss your requirements with the University's Purchasing Officer, Mr. Chris Silker.

### **Private purchases**

Members of staff should resist the temptation to use the departmental systems to place private orders for equipment or consumables. Under normal circumstances, the technical staff may be happy to offer informal advice on purchasing, but it forms no part of their duties. The department has no financial systems for placing private orders. Many suppliers will nevertheless give educational discounts to private orders placed from University staff. For a full list of suppliers please refer to the University's Purchasing Department website at <http://www.pcweb.liv.ac.uk/purchasing>.

## **Reporting procedures for equipment faults and problems**

### **Computer Hardware**

The default means of reporting problems should be by e-mail to Steve Downing and copy to Dave Ford ([steved@liv.ac.uk](mailto:steved@liv.ac.uk) and [fordy@liv.ac.uk](mailto:fordy@liv.ac.uk) respectively). This report should give as much information as possible about the problem and an indication of the urgency. A reply will be sent even if the problem cannot be fixed straightaway. In those cases where you cannot access e-mail, or in the case of a problem requiring immediate attention, please ring 44734. If there is no reply and a voice mail message left, please follow it up with an e-mail report to ensure that it does get dealt with. The purpose of using e-mail to report problems is to ensure that priority can be given to the most urgent jobs. Faults reported by other means, e.g. over coffee, are also liable to be forgotten.

### **Computer Software**

Problems with software on the MNTS (Managed NT Service) are best reported to the CSD help desk, internal telephone 44567, e-mail helpdesk. They have a team of experts familiar with the supported software and with commonly experienced problems. The CSD support staff also have the necessary permissions. If you contact the helpdesk by e-mail, which is the preferred method, please copy your message and their reply to Steve Downing ([steved@liv.ac.uk](mailto:steved@liv.ac.uk)). Other software problems should be reported to Steve. All hardware faults, associated with the MNTS and otherwise, must be reported to Dave Ford & Steve Downing (see above).

### **Visual Aids**

Problems with the screens & OHPs in all LTs (apart from 027 and 029) should be reported to Dave Ford & Steve Downing. The department currently has two data

projectors. One projector is permanently mounted in 027 and the other is a portable projector. Staff wishing to book the portable projector should see Dave or Steve.

Suggestions for improvements to any equipment can be made to Dave Ford & Steve Downing or your divisional Equipment Committee representative. Please notify Dave Ford if any equipment is moved.

### **Building Faults**

Faults with the M&O building (doors, lights etc.) should be reported to the building manager, Mr. Paul Crichton. He can be contacted on ext 44085 or by email at [P.D.Crichton@liv.ac.uk](mailto:P.D.Crichton@liv.ac.uk). He also has responsibility for Lecture Theatres 027 and 029. This includes making sure that they are well stocked with supplies of white chalk and cleaning the boards at least once a week during semester time.

## **1.6.3 Learning and Teaching Committee (LATC)**

The Learning and Teaching Committee of Mathematical Sciences deals with the quality management and content of teaching provided by the Department, including service teaching. Quality management takes place largely through three key procedures: feedback from students via the Staff-Student Committee, feedback via Student Questionnaires, and the peer review of teaching. The information from these and other procedures feeds into the Module Report. LATC also discusses teaching innovation and delivery and issues of student welfare, personal tutor system and other support. See Section 0 for more details.

The members of LATC are Toby Hall (Chair), Ian Jack (Secretary and questionnaires) Peter Giblin (ex officio), Mike Ball (ex officio) and Roger Bowers (ex officio). Additional peer monitors are Alan Irving, Vladimir Zakalyukin. Any member of staff with a query about teaching issues is encourage to talk to any member of LATC; if necessary the matter will be put on the agenda of a meeting. Note that new members of staff will be assigned a mentor, and also that there are Staff Development courses available. See Section 6, [6.5](#).

Minutes of LATC are on the web:

[http://www.liv.ac.uk/maths/TL\\_COMMITTEE/](http://www.liv.ac.uk/maths/TL_COMMITTEE/)

There is a **Curriculum Subcommittee** whose job it is to review the content of courses and propose new modules. The Curriculum Subcommittee reports to LATC. The members of the Curriculum Committee are Victor Flynn (Chair), Alexei Piunovskiy and one other to be announced. See

[http://www.liv.ac.uk/maths/PURE/Curriculum\\_Committee/](http://www.liv.ac.uk/maths/PURE/Curriculum_Committee/)

#### **1.6.4 Research Committee**

This consists of Sasha Movchan, Mary Rees, Damian Clancy, Peter Giblin (ex officio), Chris Michael (Chair). The Committee discusses any issues related to the research effort of the Department and reports to Management Committee.

Following a Departmental Meeting in November 2000, the following Departmental Research Policy was agreed:

The Department strongly encourages members of staff to make applications for research funding, whether they are for research fellows or students, equipment, travel or other research purposes. Grants which bring overheads to the University are of particular value.

The Research Committee will provide guidance on the preparation of research proposals to anyone who needs it. Members of staff are encouraged to plan their writing of proposals so that the Research Committee has time to comment on them before the final draft is produced for submission.

The research component of the annual Portfolio of Activity of each member of staff will, with that member of staff's permission, be copied to the Research Committee who will prepare an annual summary of progress and research report for the Department, and also confidential and constructive feedback to members of staff.

All requests for departmental research funding will be considered by the Research Committee in the light of a member of staff's research effort, including applications for research grants, before being passed to the Head of Department for decision.

#### **Staff Support and Guidance Committee**

[http://www.liv.ac.uk/mathsssg/SSG\\_COMM/](http://www.liv.ac.uk/mathsssg/SSG_COMM/)

#### **Recruitment and Admissions Group**

<http://www.maths.liv.ac.uk/staff-only/RAG.html>

#### **1.6.5 Staff-Student Committee**

This committee meets about once a month in term-time to discuss any matters of interest or concern to students. It has elected representatives from all years of study, and a number of staff representatives, currently Damian Clancy, Chris Michael (Secretary) and Toby Hall.

<http://www.liv.ac.uk/~mathssc/>



In particular the Staff-Student Committee, which reports to Learning and Teaching Committee, makes annual Departmental Teaching Awards and also makes recommendations for Sir Alastair Pilkington Awards for Teaching Excellence.

## **1.7 Departmental Funding**

### **University and Departmental Budgetary Processes**

The University is well placed but operates in a very competitive environment. The money we receive is related to our activity (research output and full time equivalents taught). Our funding is not related in any way to the number of staff on the books. In other words, your presence here does not earn us your salary, but it is to be hoped that your activities will. As explained elsewhere, research income from the Funding Council (HEFCE) is based on the quality of research as measured in the Research Assessment Exercise (RAE), and also in Research Council overheads. Teaching income depends on the number of students taught and the category in which they fall (roughly: clinical, experimental, part-experimental, classroom based). Most mathematics students fall into the part-experimental category.

### **Income and Expenditure Model**

In an effort to incentivise departmental performance (most of us would recognise the department as our natural academic home, in preference, say, to the faculty), the University uses an Income and Expenditure Model, which tries to do what it says: measure the income and expenditure of each department. This is applied with judgement by the University Budget Group to determine the funding of individual departments.

One rather obvious point has to be borne in mind: a large proportion of University expenditure is basically fixed costs, that is salary for staff with permanent appointments. This means that the system has a substantial amount of inertia and budgets cannot be changed rapidly. However the intention is that over a period of time resource will follow income. There will, of course, always be a level of cross subsidy between departments, and substantial shifts in resource will result from changes in RAE grade or the collapse or launch of new courses. However it is clear that the University needs to incentivise departmental performance and this is the method which has now been chosen in this and most other Universities. This means that we must do what we can to earn RC grants, to attract students into our courses, and provide them with a good service, and to improve our RAE grades. If we are successful, then we can hope that staff will be replaced as they leave, freeing up more time for research and our non-pay allocation (funds for equipment, visitors and travel) remains good.

## **2 Board of Studies in Mathematical Sciences (BSMS)**

<http://www.liv.ac.uk/math/BSMS/>

The Board of Studies in Mathematical Sciences deals with the administration of all undergraduate teaching in this Department. Until 2002 the Board was called the Board of Studies in Mathematics and Computing. However, the Computing Sciences department has now created its own separate Board dealing with undergraduate

matters. The BSMS office is staffed by its Chairman, David Hodgkinson and a Secretary, currently with two part-time secretaries, Philippa Greene and Karen Hurst.

The key role played by the BSMS is illustrated by the following list of responsibilities of the Chair/Deputy Chair and the Secretary:

**Chair: (David Hodgkinson)**

Chairing Board meetings.

UCAS Visits:

Overall responsibility plus one planning meeting per year;

Welcome talk to visitors;

Available for consultation.

Registration:

Overall responsibility plus one planning meeting per year;

Registration: database;

Welcome talk to freshers.

Examinations:

Overall responsibility plus one planning meeting per year;

Examination notes for students;

Examination guidelines (staff);

Examination meetings schedule;

Secretary of Honours Examiners' meetings (Mathematics; MS+CS);

Chair: scaling meeting;

Chair: Scholarships and prizes.

Degree Day Reception:

Overall responsibility plus one planning meeting per year.

- Interviewing Reported Students.
- Updating course syllabuses.
- Attendance at Faculty meetings (Science) (for BSMS interests).
- Student queries, advice, etc. (open door).
- Staff queries etc.
- BCh0 Combined Honours: Member of the Board of Studies.
- One Board plus one examiners' meeting per annum.
- Course monitoring
- Course end of year questionnaires.
- Updating of Options Booklet and Handbook.

<p><b>Secretary, Board of Studies in Mathematical Sciences (Philippa Greene and Karen Hurst)</b></p>
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First contact for telephone enquiries (particularly through prospectus).

Maintenance of Student Record cards.

Typing and distribution of agenda and minutes of Board and Management Committee meetings.

Maintaining records and writing to all students reported for unsatisfactory attendance.  
Contacting students via email with departmental information.

UCAS applications:

Booking all rooms necessary for Open Day;  
Booking coaches;  
Filing all UCAS forms;  
Maintaining database;  
Typing all UCAS documentation;

UCAS visits:

Preparing labels and attaching to programmes for current visit;  
Confirming the number of coaches;  
Informing the Green Room of expected number of lunches;  
Preparing the lunch vouchers;  
Organising student helpers;  
On duty in MRR from 11:15 to 14:00 to welcome visitors and give information to parents.  
Follow up letters to students regarding Open days.

Examinations:

Typing and distributing the Examination notes for students;  
Typing and distributing the Examination guidelines (staff);  
Typing and distributing the Examination meetings schedule;  
Collecting all the medical notes, making spreadsheets and arranging in a convenient form for all the Chairs of Examiners;  
Issuing individual marks to students.  
Copying and distribution of exam papers to students on request .

Degree Day Reception:

Making all arrangements with Cathedral;  
Organising the purchase of food and drinks;  
Organising the staff, preparing the tables, giving out the drinks, tidying up.

Typing the Options Booklet (annual) and arranging printing.  
Typing the Mathematics Student Handbook (annual) and arranging printing.  
Typing the Mathematics Brochure (when update required) and arranging printing.  
Typing the 'Mathematics and Statistics' leaflet (when update required).  
Student queries, advice, etc. (open door).  
Typing the Course monitoring documentation.  
Overseeing the BSMS general account.  
Contacting graduates and employers for employment details.  
Contacting Heads of Schools regarding graduates.  
Various mail shots to prospective students.

### **3. Examinations**

#### **3.1 Examination Guidelines**

The following guidelines have been agreed by the Board and should be complied with for all papers whose results will come before a Board Examiners' meeting. The allocation of setting duties will continue to be the responsibility of individual Divisions, which will also be responsible for ensuring that papers are free from errors before they are sent to the Examinations Department.

### Setting

1. When setting an examination other than for an M.Math MATH4XY module, the setter should aim for the amount of work and the standard to be such that the mean mark of the paper is expected to be between 57% and 63%, and also that a student who has completed, to an acceptable standard, a majority of the work associated with the module should get  $\geq 35\%$ .
2. The above requirement involves precise rubrics and careful setting and checking of papers. We suggest rubrics of the form *Full marks will be awarded for complete answers to five questions. Only the best 5 answers will be taken into account.* The precise rubric and the number should be left to the discretion of each Division.
3. Setters of examination papers for year 2 modules taken by year 3 students must provide a separate paper for such students. The standard should be that of a typical Honours paper in the general subject area.
4. The setter of a paper **must** provide model solutions (preferably typed) with a careful marking scheme, and one of the duties of the checker will be to see that this marking scheme is in line with requirement (1). The setter must also provide the checker with a copy of the last similar examination paper. Need 2 copies of the final version of exam and solutions. One for the examination secretary and one for LATC.

These solutions will be sent to the External Examiner and, later, filed.

5. The first part of each question should be straightforward for the weaker student. It is unacceptable to set exactly the same question in consecutive January or May examinations.
6. An exam check sheet should be completed for each paper and sent with that paper to the External Examiner.
7. When a question has separate parts [(a), (b)...for unlinked parts or (i), (ii)... for linked parts], the marks for these parts should be given separately (and not just a single mark for that question). The rubric should also include:-  
'Marks for parts of questions may be subject to small adjustments'.

### Errors on Examination Papers

Clearly the checking process should eliminate errors and ambiguities on exam papers. If, nevertheless, an error is found before the exam, a correction slip should be given to each student with the paper and their attention drawn to it before the exam starts.

If an error is found during an exam then candidates should be informed by making an announcement. A few minutes' additional time can be given to make up for the disruption caused.

### 3.2 Anonymous Marking and Duties of Checkers

On receipt of the scripts for each module:

1. The **examiner** will mark each script without breaking the seal and put the marks on the front cover. It must be made clear on the script that all parts of all questions have been marked. Part marks and totals for questions must be indicated clearly on the script.
2. The **checker** will check the marks on each script and also that everything has been marked. Marks will be corrected in consultation with the marker.
3. The **checker** will break each seal and put the scripts in alphabetical order.
4. (a) If there is no c.a. component, the **checker** will enter the marks on the **marksheet** and give the **marksheet** to the marker.  
(b) If there is a c.a. component, the **checker** will enter the marks on a **classlist**.

For MATH101-103, this **classlist** should be given to Dave Hodgkinson by the **checker** and entered into his spreadsheet in the presence of the **checker**. Dave will enter the final module marks into the database in the presence of the **checker** or an examination representative. A **printout** is then forwarded to the marker.

For other modules, the **marker** provides the **checker** with c.a. marks. The **checker** will calculate the final module mark using the officially approved formula and enter it on the **marksheet**. The **marker** will check this **marksheet**.

5. Modules for BSMS examiners' meetings:  
The **marker** will give the **marksheet** to the examinations representative, who will enter the marks into the database, and will check the **printout** as usual.

Modules for Engineering examiners' meetings:

The **marker** will give the **marksheet** to Dave Hodgkinson, who will enter the marks on to the database.

6. The examiner and checker will look at all students with surnames in common to check that their marks have been correctly assigned.
7. Subsequent procedures will follow the examination guidelines.

#### Medical and other evidence

Students have been informed of their responsibility to report medical and other extenuating evidence for under-achievement in examinations to the HOD (or BSMS).

A notice drawing attention to the relevant section of the "Notes for Guidance of Examination Candidates" has been made available to all students.

The Chairman of the BSMS will be responsible for reporting to the Chairman of the various meetings of examiners, the name of any student, who, for medical reasons, has been absent for more than two weeks during term time. The Chairman should also be informed in writing, in advance of the meeting, of any grounds for under-achievement during the examination period. This will usually be done by the Chairman of the BSMS, Personal Tutor or Invigilator as appropriate. The Chairman should also be informed of relevant evidence from earlier years of study.

**Members of staff should be aware that hearsay evidence produced orally at the final meeting will be ruled out of order.**

### **Examiners Meeting and Student Progress**

At these meetings a range of evidence is presented, and cases are often discussed at length. The final decision is taken with due regard to that discussion and, of course, with reference to the external examiners' views.

It is vital that no staff member should ever anticipate this process and inform a student beforehand of what they believe will be the outcome. This can cause distress to the students, embarrassment to their Department and ultimately serious trouble for the University.

### **Marking and decision making for the Year 0, 1 and 2 exams and Year 3 (M.Math) exams**

The allocation of individuals' marking duties will be done by Divisions. In order to comply with tight schedules for the production of papers for examiners' meetings it is essential that staff give first priority to the marking of scripts after a paper has been sat. The procedure, following anonymous marking and checking, is as follows:-

- i. Raw marks should be entered by the checker on the list provided by the Examination Representative and returned to him/her for entry on the computer. See 2.2.
- ii. The Examination Representative will then give you a print-out of your results which will include some Statistical data for your paper. Each raw mark should be checked with the mark on the front of the answer book.
- iii. Upon receiving this print-out you should check that your results comply with the first setting guideline. Because it is not always possible to achieve this requirement and because marks may be needed for subsequent degree awards, some scaling of marks may be needed. To do this each group of examiners plus the Head of Department or his nominee should look carefully at each paper (including its average mark), and then decide definite **pass/fail** and **I/II(i)** borderlines. These are then set at 40 and 70, and a linear interpolation gives the other scaled marks. (The computer will do this for you). Scripts for students with scaled marks near 40 and 70 should be clearly identified on the front cover. A short written report should be attached if there are reasons why the results should not comply with the first setting guideline. The examiner should identify

(on the Examination Paper Report) failing students whose marks may be raised to 35 or to 40, or clearly state that there are none.

- iv. The print-out together with any instructions for scaling should be returned to the Examination Representative as soon as possible. Note, however, that the Examination Representative will only accept the list if the declaration that procedure (iii) has been complied with and is signed on the Exam Report Form by **all the Examiners for the paper and the Head of Department or his nominee**.
- v. Upon receipt of this the Examination Representative will then transmit final marks to the database. **All final marks should be on the database by the deadline given in the document 'Meetings of Examiners'**.
- vi. The Chairmen of Year 1 and Year 2 meetings together with the Examination Representatives and one representative from each department for both Year 1 and Year 2 will meet in February 2004 and May 2004. Information will be tabled, giving, for each module, the mean mark obtained by the class on all other modules, for which marks are available. At the discretion of these meetings, failing students identified in (iii) above will (a) have their marks returned as 35 or 40 **if required**, (b) be referred to the BSMS Examiners' meeting. The BSMS examiners may return a mark as {33 or 34 or 35} or {38 or 39 or 40}. Year 3 modules are not included.

#### **Marking and decision making for the Honours year exams.**

[See separate sheet for G101 (M.Maths), Year 4].

Unlike the Faculty-run first and second year examinations, there is no rigid formula used to determine the class of your degree: however, it is necessary to form an initial ranking of candidates so that people with comparable performances can be considered together. Your performance in year 2 will be taken into account when forming the initial ranking.

- I. Your eight marks in year 2 will be totalled and scaled to give a mark out of 300.
- II. Marks for your equivalent of 120 credits (subject to the proviso that at least 90 of these must be on modules available only in year 3) will be totalled and scaled to give a mark out of 700. (In some Honours schools certain modules must be included in the eight to be counted. For example a project must be included in the Computer Science degree.)
- III. The marks obtained under (I) and (II) will be totalled to give your initial score out of 1000 but the examiners will have available all your honours marks and the carry forward mark for year 2.
- IV. Once the initial ranking has been made, the examiners consider each student individually. They may consider factors other than the marks accumulated under (III). In particular, account will be taken of the number of so-called 'alpha' and 'beta' grade answers which you give; an answer is graded 'alpha' if you give an almost complete answer to the question, and 'beta' for a substantial answer.

In addition, in order to be considered for a First Class Honours degree, the performance in the final year must, of itself, be of First Class standard.

These guidelines apply up to 2004. In 2005 the decision on class of degree will be decided by profiling.

### Decision Making for the Honours Year

1. The examiners are all teaching staff in the Departments together with the External Examiners.
- 2 (a). Decisions at the examiners' meetings are based primarily on
  - (i) the **average** mark  $\frac{7D+3C}{10}$  , where
    - (a)  $C$  is the carry forward mark from year 2,
    - (b)  $D$  is the average of the marks obtained on the 120 credits taken in the Honours year.
  - (ii) the total numbers of alpha and beta answers in the component  $D$  of the final mark.
  - (iii) no student should normally be considered for a first class honours degree without (work in final year 1<sup>st</sup> class of itself).
  - (iv) no student who fails to pass the equivalent of at least 15 credits only available in the honours year may qualify for an honours degree.
- 2 (b). Students awarded the degree of B.Sc. without Honours should have an overall average of 35% or better.

### Marking

1. Honours questions should normally be set and marked so that a weak student should be able to earn 8 marks, completely satisfactory answer earns 20 marks, and only the best five answers should be counted when determining the final mark. Likely variations from this are 25 marks per question with the best four answers being counted.
2. When a question is marked (with the marks clearly shown on the original script), it should be decided whether or not the answer is of **alpha** or **beta** quality. An alpha answer should **be one in which the candidate satisfies the examiner that he/she understands the ideas, and is competent in using the techniques, being examined by the question.** To translate this definition into marks, a question that is given a mark of:
  - (i) 16 or more, out of 20, (or 20 or more, out of 25), should automatically be recorded as an **alpha** answer;



- (ii) 14 or 15 out of 20, (or 17 to 19 out of 25), should be recorded as **alpha** or **beta** at the discretion of the examiner;
  - (iii) 12 or 13 out of 20, (or 15 or 16 out of 25), should automatically be recorded as a **beta** answer (a **competent** answer, rather than a distinguished one);
  - (iv) 10 or 11 out of 20, (or 13 or 14 out of 25), should be reported as a **beta** answer or not, at the discretion of the examiner.
3. If the scripts when marked give the impression that some questions have been too easy or too difficult, the marking scheme should be revised and the revised marks for each script added to give **the crude total mark**.
  4. The crude total mark should be entered on the list supplied by the Divisional Examination Representative and the list returned to him for entry on the computer.
  5. The Examination Representative will return to you a print-out of your results which will include a Statistical Analysis of them. Each raw mark should be checked with the mark on the front of the answer book.
  6. Your marking scheme should now be further adjusted to bring your results into line with the first setting guideline and to ensure that the total marks for your module are broadly consistent with impressions of overall quality in the following way:

<b>Quality of script</b>	<b>Adjusted total mark</b>
Outstanding	80 - 100
First Class	70 - 79
Upper Second	60 - 69
Lower Second	50 - 59
Third	41 - 49
Degree without Honours	35 - 40
Fail	0 - 34.

See below for Qualitative Marking Descriptors.

The Head of Department or his nominee should be involved at this stage. Note that these Senate guidelines apply only to individual modules.

7. The total mark (not exceeding 100) for each script should then be returned, **together with the numbers of alpha and beta answers**. The maximum number of possible alpha and beta counts should be returned. An asterisk should be attached to a final mark if it differs substantially from the crude mark, and an explanatory note should be added for the External Examiner.
8. A report on the paper should be written for the External Examiner.

The final mark sheet will contain a declaration that the above procedures have been carried out and this should be signed by both the Examiner and the Head of Department or his nominee. Examination Representatives will **not** accept mark lists that do **not** contain these signatures.

**The final marks should be on the database by the deadline given on the schedule for the “Meetings of Examiners in February, May/June and September”.**

### 3.3 Qualitative Marking Descriptors for Mathematics

#### Examinations

**Note:** These descriptors apply to examinations in all years. The mathematics itself, and the style of examination questions, become more demanding in later years, and therefore require greater intellectual effort on the part of the candidate to achieve the corresponding descriptor.

<u>Class</u>	<u>Mark</u>	<u>Descriptor</u>
	90-100	Essentially complete and mathematically correct answers to all questions, with copious evidence of clear understanding and technical mastery.
First	80-89	Essentially complete and mathematically correct answers to nearly all questions, with copious evidence of clear understanding and technical mastery.
	70-79	Substantially complete and mathematically correct answers to most questions with plentiful evidence of clear understanding and technical competence.
Upper Second	60-69	Serious attempts at most questions, with convincing evidence of understanding and technical ability. Some errors and omissions.
Lower of Second	50-59	Serious attempts at some questions, with some evidence of understanding and technical ability. Other answers incomplete or incorrect.
Third	41-49	Some parts of questions correct, a few attempts at whole questions. Limited evidence of understanding and technical ability.

Compensatable Fail	35-40	Some isolated pieces of correct mathematics, little serious attempts at questions. Confused and incomplete answers. Little evidence of understanding or technical ability.
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Fail	0-34	Practically no evidence of understanding or technical ability. Only isolated pieces of correct mathematics, or none.
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### MARK SCHEME for YEAR 3 MATHEMATICAL SCIENCES PROJECTS

(subject to approval by the Faculty of Science)

#### **Academic Content**

Introduction and conclusion, putting in context	10
Quality of content, scope of material, level of difficulty	20
Evidence of understanding, filling in steps and/or assessment of methodology and/or presentation of results	20
Originality of treatment, coherent account in own words	15
Initiative and diligence (supervisor only)	10

#### **Written Presentation**

Clarity of presentation, ease of reading and style, adequacy of program documentation (if relevant)	10
Grammar and spelling	5

#### **Oral Presentation**

Content (clear structure, good explanations)	5
Delivery (pacing, audibility; legibility and organisation of visual aids)	5

*You should consider whether the mark you arrive at is in conformity with the following descriptors:*

- ≥ 90 Little to criticise. Outstandingly well organised, with copious evidence of full understanding, independent reading and thinking.
- ≥ 80 Outstandingly well organised with copious evidence of full understanding.
- ≥ 70 Well organised use of most expected material, with plentiful evidence of clear understanding.
- ≥ 60 Generally well organised use of most expected material, with convincing evidence of understanding.
- ≥ 50 Sensible use of some relevant material, with some evidence of understanding.

- ≥ 40 Includes at least some relevant material, limited evidence of understanding.
- ≥ 35 Material thin, poorly organised, with little evidence of understanding.
- < 35 Very little material, unorganised, with practically no evidence of understanding.

## MARK SCHEME for YEAR 4 MATHEMATICAL SCIENCES PROJECTS

(subject to approval by the Faculty of Science)

### **Academic Content**

Introduction and conclusion, putting in context	10
Quality of content, scope of material, level of difficulty	20
Evidence of understanding, filling in steps and/or assessment of methodology and/or presentation of results	20
Originality of treatment, coherent account in own words	15
Initiative and diligence (supervisor only)	10

### **Written Presentation**

Clarity of presentation, ease of reading and style, adequacy of program documentation (if relevant)	10
Grammar and spelling	5

### **Oral Presentation**

Content (clear structure, good explanations)	5
Delivery (pacing, audibility; legibility and organisation of visual aids)	5

*You should consider whether the mark you arrive at is in conformity with the following descriptors:*

- ≥ 90 Little to criticise. Professional presentation, copious evidence of full understanding, independent reading and thinking. Contains interesting results or insights.
- ≥ 80 Outstandingly well organised with copious evidence of full understanding and showing independent reading, thinking and, where appropriate, calculations.
- ≥ 70 Well organised use of most expected material, with plentiful evidence of clear understanding.
- ≥ 60 Generally well organised use of most expected material, with convincing evidence of understanding.
- ≥ 50 Sensible use of some relevant material, with some evidence of understanding.
- ≥ 40 Includes at least some relevant material, limited evidence of understanding.
- ≥ 35 Material thin, poorly organised, with little evidence of understanding.
- < 35 Very little material, unorganised, with practically no evidence of understanding.

### 3.4 Retention of Work

Please note the following University rules taken from the University's Code of Practice on Assessment, as approved by Senate in June 2002.

[http://www.liv.ac.uk/commsec/local\\_html/hods/codeofpracticeloc.doc](http://www.liv.ac.uk/commsec/local_html/hods/codeofpracticeloc.doc) page 11.

Retention of Examination Scripts and Other Assessed Work

Boards of Examiners have a duty to retain all work undertaken under examination conditions and which contributes to a final award, for a period of one year from the date on which the award was determined by the Board. For internal and external review purposes, copies of a representative sample of all assessed work (including two each from the top, middle and bottom of the ability range) from all years of the programme and all modules or elements of the programme should also be retained for one year after the determination of the award. This should include a small number of complete sets of students' work, chosen as far as possible to demonstrate achievement across the ability range.

For **each module** about 10 pieces of coursework (e.g. homework), whether assessed or not, are to be kept (originals or photocopy) for the module report. These should reflect a range of quality, taking some from the bottom, middle and top of the range. For the core modules in Year 1 samples of homework *and* Key Skills exercises should be kept; this will be coordinated by the Director of First Year Studies (Dr. David Hodgkinson).

**Projects:** a copy is to be kept with the examination scripts.

### 3.5 Projects

The material below is extracted from the [options booklet](#) which is given to all continuing students.

#### PROJECTS IN MATHEMATICS

MATH399: Honours Mathematics Year 3 Project, semester 1 or 2

MATH499: MMath Year 4 Project, semester 1 or 2

MATH490: MMath Year 4 Project, two semesters

Project Co-ordinator for the projects in Applied Mathematics: Dr. D.M. Lewis

Project Co-ordinator for the projects in Pure Mathematics and overall coordinator for Mathematical Sciences: Prof. V. Nikulin

Project Co-ordinator for the projects in Statistics and Operational Research: Dr A. Piunovskiy.

#### MATH399

A project entails working on a topic under the supervision of a member of staff and then preparing a report and giving an oral presentation. It is hoped that this will give you some exposure to subjects not covered elsewhere, a firmer grasp of the fundamental principles underlying familiar material, and an opportunity to develop

skills in organising material and presenting a logical coherent account of it, using your own words.

### **Choosing a Project**

Documents, available from the Project Co-ordinators, contain some suggestions for project topics. Students are also encouraged to propose their own topics, which can be in any area of mathematics. If you think you want to do a project, your first step is to see the appropriate Project Co-ordinator, who will discuss the possibilities with you. It is important that you do this before the end of the summer term, whether you intend to do a project in the first or second semester. When you are fairly clear about what you want to do, the Project Co-ordinator will direct you to an appropriate member of staff.

Students are strongly advised to do some background reading, and to give due thought to the choice of topic, during the summer vacation. A student who has already booked a topic by the beginning of the summer vacation is encouraged to make a start on the work during that vacation, after discussing the matter with the supervisor. There is no reason, in this situation, why contact between student and supervisor should cease during the vacation. Providing the supervisor is satisfied with the arrangement the student may, if he or she wishes, complete a first draft of the project during the summer vacation.

### **Booking a topic**

When you have a definite choice of topic which has been agreed by the member of staff who is to be your supervisor, **you must report your choice to the appropriate Project Co-ordinator, thus booking the topic.** Do not start writing until formal permission to go ahead has been given by the Project Co-ordinator. In deciding whether to give permission for the choice of topic, the following points will be borne in mind.

- (i) Two students will not be allowed to submit essays on identical topics.
- (ii) The overlap between the material involved in the project, and in lecture courses, must not be excessive. Consult your supervisor for advice on this.
- (iii) If a student taking MATH399 also takes the History of Mathematics module MATH302 then the MATH399 project must not be on a predominantly historical topic. The topic of the MATH399 project must be largely disjoint from the topic of the student's historical essay for MATH302. It is a regulation that students taking MATH399 cannot take module MATH334.

A first semester project must be booked by the end of the second week of the autumn term, and a second semester project must be booked by the end of the autumn term. Any student who has not booked a project by the appropriate date will be deemed not to be doing a project. Completed projects must be handed in to the appropriate Project Co-ordinator (or to the divisional office) by the first day of the relevant examination period. As a matter of fairness to other candidates, students who hand in projects late without a medical reason will be penalised by having their project mark reduced according to the University's rules on late submission. If there is a reason to suppose

that a project might not be handed in by the appropriate deadline, the student must discuss the situation, as a matter of urgency, with the supervisor.

Please submit the original of your project AND either a second copy or a photocopy of the original.

### **Supervision**

Each student will see their supervisor for one period each week at first, although the amount of contact later need not to be so great. The purpose of these supervisions is to discuss sources of information, the structure and general content of the essay, and to help with any mathematical or other difficulties which may arise. It is considered important that the supervisor should be given a first draft of the project some weeks before the end of the teaching period of the semester. A check on progress is automatically made about 4 weeks after the start of the semester.

An early first draft should provide sufficient time for the supervisor to provide constructive criticism, and for the student to produce the final draft. Please note that supervisors do not undertake to make detailed corrections of drafts, as the essay is expected to be the student's own unaided work.

### **Writing essays: general advice**

Essays should not just ramble, but be clearly organised with an introduction, with some division onto labelled sections, and a conclusion. Please notice that marks will be awarded for spelling, grammar and punctuation, and your essay will certainly create a better impression if it is written legibly or word-processed. Mathematical results should be stated explicitly and clearly rather than mentioned vaguely, and the mathematics involved in the essay should be correct and coherent. If you need to include a detailed proof of a result, try to present it in your own words rather than copying verbatim from a book. Present proofs in a way that makes it clear that you understand them. Keep the notation consistent throughout the essay. Occasional relevant short quotations from source material for emphasis or illustration are in order, but straight textual transcription without clear indications of source is to be avoided.

### **Specific guidelines and assessment of essays**

It is expected that all essays will have a substantial mathematical content, though the difficulty and depth of the mathematics will necessarily vary widely. It is important to bear in mind that the essay should be written so as to be intelligible to the average third-year undergraduate in mathematics. Experience has shown that satisfactory essays tend to be of at least 6000 words. We do not wish to impose an upper limit on the length, but advise you to be careful about writing over-long essays. In case of doubt consult your supervisor on this matter. Essays can be typed or hand written (you are strongly advised to use BLACK ink so that your photocopy will be legible!). Please number the pages of your essay. It will normally be appropriate to give specific references, including page numbers, during the course of the essay. A list of all the references consulted should also be given at the end of the essay. Marks are awarded primarily for the depth of understanding of the topic revealed in the essay, and the quality of the exposition. The marking scheme is attached.

### **Oral presentation**

The presentations take place during week 11 or 12 of the relevant examination period. The concrete date will be chosen by your supervisor. It is desirable that all the presentations for a Division are organised in one session. The supervisor will invite a second member of staff to attend and assess your presentation, together with the supervisor. You may invite your fellow students to enjoy your talk as well.

You should aim for a length of about 25 minutes for the presentation, plus about a further 5 minutes for questions at the end. We suggest that you prepare the main skeleton of your talk on overhead transparencies (7-8 transparencies, with either a diagram or at most 12 lines of information on each transparency, is about the right quantity), with additions/elaborations on the blackboard. There are facilities available in the department which will allow you to prepare the transparencies. When writing on the blackboard, be sure not to spend too much time continuously with your back to the audience (if you have to do a lot of writing on the board, take frequent breaks from writing to face and talk to the audience). You may use PowerPoint or similar if you wish.

### **MATH499**

Either this module or its extended, one-year version, MATH490, must be taken by each Year 4 MMath student. The general guidelines for MATH499 are absolutely the same as those above for MATH399.

Topics for MATH499 must be more advanced than those for the third-year projects. However, it is not assumed that students produce publishable results. Nevertheless, you should make the presentation of the material original. The two most usual ways of doing this are: (1) filling in gaps in proofs, in case where the proofs in the literature have details missing; (2) applying the theory to your own examples.

The essay must be word-processed, except for possibly the mathematics. The simplest way of doing this is getting a tex file of any paper by your supervisor and just following the patterns in it.

### **MATH490**

Working on this year-long project may provide you with a good base to continue your mathematical studies through PhD. It is desirable that students working on MATH499 projects attend appropriate research seminars of the department. The oral presentation may be given as a talk in such a seminar.

There are the following natural differences with the MATH499 module:

- a) The topic booking must be done by the end of the second week of the autumn term.
- b) The essay must be submitted by the first day of the second semester examination period.
- c) There is no restriction on the length of the essay.
- d) The essay must be written in either TeX or any other word-processing language which has mathematical symbols. The simplest way of learning TeX is by getting a tex file of any paper by your supervisor and just following the patterns in it.



- e) The oral presentation must be done in week 11 or 12 of the second semester. MATH499 project must be considered as an equivalent of the MSc preliminary dissertation. MATH490 is a slightly lighter version of the MSc main dissertation, about two thirds of it.

## **4. Learning, Teaching and Welfare**

### **4.1 Policy on Standards and Quality in Learning and Teaching**

1. The stated mission of the University of Liverpool is:

- (a) To ensure that all University activity should contribute to our primary functions which are to teach students and to conduct research.
- (b) To ensure that the University of Liverpool is recognised regionally, nationally and internationally as a distinctive provider of high quality teaching, learning, and research.
- (c) To enhance the University of Liverpool's status as a respected global name in higher education.
- (d) To provide taught programmes of study of a high quality which attract able, motivated students and prove relevant to their needs and the requirements of their employers and sponsors.
- (e) To enhance the volume, quality and commercial relevance of our research.
- (f) To enhance the quality of the student experience at the University of Liverpool.
- (g) To play a full role in the economic re-generation and development of the City of Liverpool, Merseyside and the north-west of England through the provision of targeted and relevant services.
- (h) To deliver financial stability and security for the University, primarily through the pursuit of revenue generated from activities consistent with the University's mission.

2. The University recognises that ultimately the achievement of excellence depends upon the ability and commitment of its staff and students, but it depends, too, on the setting of appropriate standards, the existence of policies, procedures and resources to ensure that these standards are met and the development of mechanisms to monitor the achievement of standards and to enhance quality.

3. The main features of the University's teaching quality strategy are:

- Appropriate provision for [staff induction](#), [training](#), [development](#), [mentoring](#), [appraisal](#) and [peer review](#) to maximise their effectiveness as teachers. (Please contact the [Personnel Department](#) for further information about induction)

- Appropriate [training](#) for postgraduate students and postgraduate and postdoctoral researchers undertaking teaching duties.
- The encouragement and dissemination of best practice, particularly via the [Centre for Lifelong Learning](#), the [Teaching and Learning Fund](#), the [Sir Alastair Pilkington Teaching Excellence Awards](#) and the [Teaching Fellowships](#).
- Robust [programme approval procedures](#) involving scrutiny at departmental, Faculty and institutional level and the consideration of external advice.
- Consideration of, and response to, [student feedback](#) obtained via staff/student committees, student questionnaires and other informal routes, and the provision of appropriate and effective mechanisms for [student complaints and appeals](#).
- The provision of appropriate [support structures for students](#), including the [personal tutor system](#).
- [Annual programme monitoring and review](#).
- [Periodic subject review](#), to be conducted every five years.
- The use of [external examiners](#) and [appropriate consideration of, and response to, their reports](#).
- Quality enhancement via a structure of Faculty Learning and Teaching Committees and an institutional [Learning and Teaching Committee](#) with specialist sub-committees.
- The seeking of [accreditation](#) in appropriate areas.
- Appropriate preparation for, and follow-up to, [external review](#) of provision.

4. The University expects all its staff to accept responsibility for, and to contribute to, the achievement of its mission of excellence. However, within the formal structures of the University, responsibility for teaching standards and quality resides within the following framework:

**Departments** have primary responsibility for:

- Departmental [induction](#) of staff, [appraisal](#) and identification of staff development needs. (Please contact the [Personnel Department](#) for further information about induction)
- Development of [new programme proposals](#) and [changes to existing programmes](#), using external reference points as appropriate.
- Development and dissemination of [best practice and innovative teaching practice](#) within the department.

- Arrangements for obtaining and acting upon [student feedback](#), including the mechanisms for student representation on departmental committees as required by the [Code of Practice on Student Representation](#).
- Arrangements for responding to student complaints in accordance with the University's [Student Complaints Procedure](#).
- [Scrutinising and responding to external examiners' recommendations](#).
- Preparation of [annual programme monitoring and review](#) reports.
- Participation in internal [periodic review](#), [external review](#) and [accreditation visits](#), as appropriate.
- Operation of the [personal tutor system](#) and other [student support systems](#).

**Faculties** have primary responsibility for:

- Detailed scrutiny of [new programme proposals](#) and [proposals for changes to programmes](#).
- Conduct of [periodic reviews](#) of subject areas.
- Appointing [external examiners](#) (under delegated authority from the Council and the Senate).
- [Scrutinising and approving departmental responses to external examiners' reports](#).
- Scrutinising [annual programme monitoring and review](#) reports, recommending appropriate action by departments, initiating any action necessary at Faculty level and reporting issues for consideration at institutional level.
- Encouragement and dissemination of [best practice and innovative teaching practice](#) within the Faculty.
- Initiating with departments follow-up to [periodic review](#), [external review](#) and [accreditation visits](#).

**At institutional level** the Learning and Teaching Committee (acting where appropriate through its sub-committees, the Centre for Lifelong Learning, the Teaching Quality Support Division and other administrative units):

- Oversees the system for [programme approval](#) and recommends new programmes and changes to existing programmes to the Senate for approval, via the Academic Committee.
- Oversees the process and outcomes of [annual programme monitoring and review](#).

- Oversees the process and outcomes of [periodic subject review](#).
- Monitors the use of the QAA's quality framework (the [Code of Practice for the Assurance of Quality and Standards in Higher Education](#), the [Framework for Higher Education Qualifications](#) and [subject benchmark statements](#)) and develops new institutional codes and policies, as necessary, to assist quality enhancement throughout the institution.
- Oversees the [external examiner system](#) and considers substantive or fundamental issues raised in external examiner's reports.
- Considers academic appeals by students in line with [University's Assessment Appeals Procedures](#).
- Provides support to departments in relation to [periodic review](#), [external review](#) and [accreditation processes](#) and monitors follow-up action.
- Administers the [Teaching and Learning Fund](#), the [Sir Alastair Pilkington Teaching Excellence Awards](#), the [Teaching Fellowships scheme](#) and any other funds which the University makes available for the support of teaching and curriculum development.
- Provides central [student support services](#) (including [careers](#) and [welfare advisory services](#)) and oversees the [personal tutor system](#).
- Encourages and disseminates best practice and innovative teaching practice.
- Provides [institutional induction programmes](#), [staff development training](#) and the [Certificate in Professional Studies in Learning and Teaching in Higher Education](#).
- Encourage s membership by academic staff of the [Institute for Learning and Teaching](#) and participation in and use of the [Learning and Teaching Support Network](#).
- Monitors and reviews the [recruitment](#) and [induction procedures](#) for new staff and provides [personal induction awards](#) to encourage personal development.

5. Information about the policies and procedures which exist to promote teaching quality is available on the Teaching Quality Support Division website at <http://www.liv.ac.uk/tqsd>.

## **4.2 Peer Review of Teaching**

The Department has had a system of peer review of teaching, which has been in place since 1996/7 and has proved very effective. The system, which is operated by Teaching and Learning Committee, works as follows.

There are a number of teaching monitors appointed by the Head of Department. One or more weeks in each semester are selected and advertised in advance as monitoring weeks, and a sample of modules in operation during that week will be visited by one of the monitors. This sample is subject to some constraints: (i) every lecturer will have at least one lecture course monitored in any academic year; (ii) every lecturer giving a module for the first time, or after an interval of not teaching it, will be monitored; (iii) any module which was considered by LATC to pose problems with the teaching the previous year will be monitored. The monitor will contact the lecturer in advance who will supply a list of contact hours and locations, indicating which are lectures and which tutorials. The monitor will select one lecture slot (and/or occasionally a tutorial) and will advise the lecturer just prior to the monitoring session of their attendance. Where possible the monitor and lecturer should arrange a short debriefing session immediately after, the main purpose of which is to give the lecturer the opportunity of drawing any special circumstances to the attention of the monitor. If the lecturer feels that the session was very atypical, he/she is free to ask for a second monitoring session.

To avoid unconsidered and inconsistent feedback, there is a meeting of monitors prior to the return of the monitoring report form, which takes place as soon as possible after the monitoring week. In very exceptional circumstances a second monitoring session will be arranged. Generally, this procedure has worked very well, and has proved a very positive experience for many. The monitoring form remains confidential between the lecturer and LATC. From time to time LATC may pass on good teaching practice to all staff, including advice on how to deal with particular problems which have arisen.

Teaching monitors are appointed by the H.o.D. and include all members of LATC.

### **4.3 Student Questionnaires**

All modules taught by Mathematical Sciences staff have student appraisal in the form of questionnaires. Most modules use standard machine-readable questionnaires, though a number of modules require customised questionnaires. These are drawn up by the lecturer and approved by LATC. A lecturer who feels that the standard form is not appropriate is invited to discuss the matter with a member of LATC. Web based questionnaires are being used in some modules on an experimental basis.

The administration of questionnaires is the responsibility of the secretary to the SOR Division, Judi Young. The procedure is, briefly, as follows. The week in which questionnaire forms will be filled in by students is announced in advance to all staff. Each member of staff should choose an appropriate class period and announce this to their students. Questionnaire forms are available from Judi Young, and it is the lecturer's responsibility to collect them. Included with the forms is a statement which the lecturer should read out to the class:

The questionnaires are anonymous and are not seen by the lecturer until after the assessment of this module is complete.

Written comments are very valuable. All are read and considered carefully. Please make them on the REVERSE of the questionnaire form.

Please do NOT fold the questionnaire before handing it in.

Questionnaires should be collected by one or more students at the end of the period and taken in a sealed envelope to Room 308 (letter box) or Room 309 in the Mathematics Building.

Summaries of service module questionnaires are passed to Staff-Student Committees in other departments. All others already go to the Mathematical Sciences Staff-Student Committee, who also see the lecturer's response form (Section 0 below).

The lecturer leaves the room about 15 minutes before the end of the class period and a student is delegated to hand out questionnaire forms (several students in large classes). When completed, the questionnaires are collected by the same student(s) and sealed in one or more envelopes. These are delivered to the BSMS Secretary's office, Room 308, which has a letterbox. Alternatively they can be given to a member of LATC. Machine-readable questionnaires are processed by Students and Examinations Division; summarizing of written comments, and processing of non-standard questionnaires, is carried out by LATC. Once the departmental assessment of the module is complete, questionnaires are returned to lecturers for the preparation of the Module Report (below). Questionnaires are finally stored by LATC.

Special arrangements apply to Project modules for which a customised questionnaire—standard across the Department—is provided. A student who writes a project is given a questionnaire form by their supervisor towards the end of the semester, and returns the completed form to Room 308 or to a member of LATC. The questionnaire is retained by LATC until departmental assessment of the project is complete and is then returned to the supervisor; in the case of projects, anonymity of questionnaires is neither possible nor appropriate. The supervisor fills in a response form and this together with other relevant material is put into the Module Report for all projects with the same code.

#### **4.4 Module Reports**

Each presentation of a module generates a Module Report which consists of the following (with appropriate variations for a module which is continuously assessed, or for project modules):

1. The module syllabus.
2. The Peer Review Monitoring Form (if appropriate). This results from the observation of teaching. Not all modules are reviewed. Each lecturer is peer-reviewed at least once a session. Every lecturer new to a module is peer-reviewed.
3. A summary of the student questionnaires which are distributed for each module towards the end of the teaching period. This consists of numerical averages and comments.
4. The student questionnaire Lecturer Response Form completed by the lecturer in response to the student questionnaires.
5. Possible comments from staff-student committee, which has available 1 and 2.

6. The Lecturer Report Form which reports on aspects of the presentation of the module and includes any proposed changes in content or delivery.
7. A copy of the exam paper, solutions and marking scheme - this includes a September paper if appropriate.
8. The Examination Check Form which includes remarks made by the external examiner and a note of any action taken.
9. The Examination Report Form, including September if appropriate. This includes the checker's agreement that everything has been marked and totals are correct. It also includes details of any scaling etc.
10. An exam mark list (rank order, scaled marks), including September if appropriate.
11. A list of any continuous assessment marks (of particular use for re-sitting students).
12. Any correspondence relevant to the presentation of the module and its review.
13. A small sample of student work, about 10 items covering a range of quality.

#### **4.5 Course Innovation**

The Curriculum Committee (CC), a subcommittee of the Teaching and Learning Committee, deals with course innovation. It is responsible for overseeing all taught degree programmes and their contents. Module content (including service modules) is consequently their responsibility, although traditionally individual lecturers have greater control over the detailed content of third year options, once the CC has defined the basic area. Anyone with specific and constructive ideas for new courses or modules is encouraged to take them to the Chair of the CC.

#### **4.6 Certificate in Teaching and Learning in HE**

The course currently offered by this University is designed to help staff with their teaching duties and will also lead to a recognised university qualification. For further information, see Section 8.1, CCAP.

#### **4.7 Lectures, Tutorials, Homework, Assessed Work and Office Hours**

A module of 15 credits will normally have 36 lectures of 50 minutes duration, or equivalent, and for each lectured module there should either be a tutorial/problems class period or an office hour provided by the lecturer. 150 hours is the nominal time which a student should spend on a 15 credit module, including revision and exams. The total contact hours should not exceed 48. For Year 1 core modules special arrangements are made with small tutorial groups, and for Year 2 modules the tutorial/problems class period may be shared between two or more modules but will be timetabled. For Years 3 and 4 a suitable tutorial time should be negotiated directly with the class.

Homework should be set regularly, normally once a week and at least once a fortnight. Marked scripts with model solutions should be returned to students promptly (normally within a week). Lecturers should keep a record of homework marks, which can be used at examiners' meetings as secondary evidence.

**Attendance** at Year 1 and preferably also Year 2 modules should be monitored. Persistent absentees should be reported to the BSMS.

All Year 0, 1 and 2 modules are expected to have an element of **continuous assessment**, at least 10% and, for lectured modules, not normally more than 15%. The form of continuous assessment is at the discretion of the lecturer; it can take the form of homework marks or one or more class tests. Note that this needs to be **moderated** (see Section 0 below).

A pro-forma for advertising Office Hours is available from divisional secretaries. Each member of staff should advertise at least two office hours, which are suitable for students in his or her classes. A copy of the pro-forma should be deposited with the divisional secretary.

When no suitable past examination paper is available, members of staff are expected to provide the class with a “mock examination paper” of the appropriate standard.

Examination papers from previous runs of a module should be placed on the Departmental web page (instructions are on the staff section of the webpage). The Department does not have a firm policy on provision of solutions to past examination papers; this is left to the discretion of the lecturer. However, all lecturers should ensure that students have adequate practice in solving problems of examination standard.

#### **4.7.1 Postgraduate markers and tutorial assistants**

CCAP are providing some initial training for postgraduate assistants. So far as the Department is concerned, members of staff are expected to provide on-the-job training:

Postgraduates doing marking: the member of staff should mark some of the scripts of the first assignment in collaboration with the postgraduate, and give clear guidance on what is required. Thereafter the member of staff is to monitor marking as needed.

Postgraduates assisting in tutorials (or problems classes, etc.): the member of staff should explain to the postgraduate what is expected and then monitor as necessary.

When a postgraduate student marks work in Year > 1 which will count towards the assessment of the module (and hence eventually to the classification of the student’s degree) then all marking must be moderated by the member of staff. This will usually mean that a sample of each week’s marking needs to be looked over by the staff member and any necessary corrective action taken.

#### **4.7.2 Keeping Assessed Work and Samples of Other Work**

Please refer to Retention of Work, Section 2.4 (page 27).

#### **4.7.3 Moderation of Assessed Work (in all Years)**

When an individual piece of **assessed coursework** counts at least 10% towards the total assessment this needs to be **moderated**. When there is more than one member of staff for a module, then the scripts can be passed round the members of staff. When



there is only one member of staff then the moderation will be done by the exam checker. As for examination scripts, moderation will ensure that everything has been marked and that addition of marks is correct.

## **4.8 The Personal Tutor Scheme**

[http://www.liv.ac.uk/maths/SSG\\_COMM/tutorials.htm](http://www.liv.ac.uk/maths/SSG_COMM/tutorials.htm) links to tutor lists and University Policy.

The Personal Tutor scheme is under review, both at Departmental and at University level. Assignment of Personal Tutors is done by the Departmental senior tutor Dr. Ke Chen. The following describes Departmental practice.

Personal tutees in Year 1 will, so far as possible, be a subset of one of the academic core tutorials for each member of staff. Adjustments are made to ensure all academic staff have new tutees. (Year 0 students are also assigned a personal tutor.) Tutors will be expected to maintain contact with their personal tutees in all years of study, as detailed below.

Joint Honours students will all have a named contact person in Mathematical Sciences. This will apply to students in Years  $> 1$  as well as 1. When there is a personal tutor in the department then he or she will be the contact person; otherwise one named person for a given degree programme should be sufficient.

Tutees are assigned to tutors by the end of the first week of the semester in order that the list of students should be as complete and accurate as possible. It is the responsibility of tutees to contact their tutors, but tutors are expected to make reasonable efforts to follow up strays. A possible idea (suggested by the Senior Tutor in Science) is for tutees to be asked to send to their personal tutor a note, by e-mail, containing home and local addresses, telephone numbers and any other information which the student would like to pass on).

When a personal tutor is on leave, or is otherwise unavailable, the personal tutees will be re-allocated, as a Departmental matter.

### **Meetings with Tutees**

All Yr1 tutees should see their personal tutor in the first week or so of Semester 1, for introduction and explanation of the system.

Personal tutors should attempt to see their tutees in Years  $>1$  near the beginning of the first semester, to 'establish contact' again, and to check that the students are happy with their registrations. Contact will normally be made by e-mail. At this stage in Years  $> 1$  non-appearance of the tutee is not a 'reportable offence'.

**About week 9 of the first semester** every tutee will be expected to see their personal tutor to monitor progress. For first year students the web-based mark recording scheme should make it easy for tutors to find out about their tutees' progress. For Years  $> 1$ , the student will be expected to arrive with a note of their progress, e.g. homework marks.

The summons to these meetings will be sent by a general e-mail and noticeboard announcements but it will be the responsibility of the tutee to attend; non-attendance will be reported to the Director of Year 1 for Year 1 students and to the BSMS for Year > 1 students.

**In about Week 3 of the second semester** tutees should see their tutors about first semester exam results, again to monitor progress. It will be the tutees' responsibility to see their tutors and failures to do so will be reported to the Director of Year 1 or to the BSMS as above. Tutors should consult examination mark lists to find out their tutees' marks, taking care to use the final marks as agreed at the Faculty Examiners' Meeting.

Another meeting should take place in **about week 11 of the second semester**, for students who are not in their final year. At this meeting, students will be provisionally registered for the next year's modules. In addition, students progress should be monitored as in the first semester, and an end-of-year questionnaire issued to the students. Ideally this should be completed and returned to the BSMS office straight away.

For Progress Committee and related matters, see Section 5 (pg 42).

One of the University guidelines says that tutors should tell personal tutees how to contact them in an emergency. It is of course up to individual tutors to decide whether they wish to give a home telephone number to a student. The University's number 0151-794 2000 is available out of hours.

For your information, the following guidance was received from Senate House (Pamela Bell-Ashe) on this:

It is, of course, at tutors' own discretion whether or not they choose to give out their home telephone numbers. I know many do but I can also understand why people might prefer not to. If someone rings the University out of normal hours the call is taken by Security. They are able to contact a number of people, including myself, if appropriate. In fact, I do not receive many calls out of hours, maybe about 20 this academic year, and, in the vast majority of cases there is actually very little I can do at the time. (There are exceptions, most notably, if it is a suspected case of meningitis, but these are a minority.) Usually it is more appropriate to wait until the following morning and then follow it up if necessary.

### **The Responsibilities of Personal Tutors (University Policy)**

See Chapter 14 of the Academic Handbook, available on the web at

<http://www.liv.ac.uk/qau/achndbk/chpt14/14perstu.htm>

The code of practice for Personal Tutors and Tutees is at

<http://www.liv.ac.uk/~bellapj/coppertu.htm>

## 4.9 Student & Examinations Division (SED)

<http://www.liv.ac.uk/SED/>

As its title suggests, the Division is primarily concerned with student related administration and support, as well as the organisation of examinations.

The Division is responsible for the primary maintenance of the student database which, from September 1999, includes information on all programmes of study as well as individual modules. It works with departments and faculties to ensure that an up-to-date and accurate database is maintained. This work also includes liaison with student sponsors such as Local Education Authorities and the Student Loan Company. Much of this liaison is now concerned with tuition fees and a recent development has involved the creation of a Tuition Fees Office within the Division, to provide a focus and advice to students on the Government's student support arrangements. The Division is on the ground floor of Senate House and has two enquiry counters at which students may receive individual attention and help in resolving their queries.

As well as enabling the initial and continuing registration of students by faculties, the Division also has the pleasurable task of organising the degree ceremonies at which students receive their final awards. Less pleasurable tasks involve dealing with cases of student discipline, student assessment appeals, research degree appeals and student progress appeals.

The organisation of all formal examinations, the printing of all examination papers and the collection of examination results is a major task, and the Division has a dedicated section which maintains close links with departments to ensure the smooth operation of this vitally important function. In addition, the Division assesses the special needs of candidates and is responsible for ensuring that those needs are met. The organisation of examination invigilation and the formal appointment of External Examiners are further examples of the comprehensive examination duties undertaken by the Division.

The above provides a very "broad brush" view of the role of SED. Staff or students requiring further advice on any aspect of the Division's work should initially contact the following:

Gary Walker	student related and general queries
Paul Clarkson	database queries
Les Nevin	examination queries
Matthew Stephens	postgraduate research student queries
Nuala McCann	degree ceremonies
Graham Beale	tuition fee queries

## 4.10 Periodic Review

The purpose of periodic review is to monitor the quality and standards of the programmes and awards offered by each department, and as such it forms an important part of the University's overall quality assurance procedures. Every department in the University will undergo review once every four years.

Mathematical Sciences will be reviewed in March 2004. The methodology is based on the QAA subject review method that had been scheduled for introduction in 2001. Departments produce a self-assessment document which, together with other relevant documentation and statistics, provides the basis for a one-day departmental visit. This visit is preceded by a preliminary planning meeting between the Dean and the Head of Department, and a visit team meeting on the day before the visit itself. The visit itself concludes with a meeting of the visit team, followed up by written reports which form the basis of feedback to the Department in a subsequent meeting. The feedback meeting produces an agenda for action which is then reviewed in a further meeting six months later.

The visit team is chaired by the relevant Dean and includes one external assessor and an appropriate number of colleagues from other Departments in the Faculty. There will also be an involvement of a Pro-Vice-Chancellor or a senior member of staff from another Faculty.

The Teaching Quality Support Unit's (TQSD) website is <http://www.liv.ac.uk/tqsd>. Details on the periodic review can be viewed at <http://www.liv.ac.uk/tqsd/Periodicreview/periodicreview.htm>.

## **5 Research Issues and Funding**

### **5.1 Travel Grants**

Each of the divisions have Travel accounts which are used to support a variety of research activities, and in particular staff travel to conferences or other venues where research is carried out. The funds available are limited; a rough rule of thumb is that research active staff might reasonably ask for up to £1,000 in any 3 year period. This said, staff are strongly encouraged to seek funding from other bodies (e.g. EPSRC and Royal Society). Please discuss requests with your Head of Division before making arrangements. See also Section 1.6.4: Research Committee.

### **5.2 British Council**

The British Council promotes educational, cultural and technical co-operation between Britain and other countries. The Council's work is designed to establish long-term and world-wide partnerships and to improve international understanding. Science, scientific and technical training, exchanges and research collaboration account for more than a quarter of its total activity. The Council funds over 9,000 scientific visits a year and more than 1,300 research links. More information is available on their web-site: <http://www.britcoun.org/science>.

### **5.3 Research Development Fund**

[http://www.liv.ac.uk/University/research\\_and\\_business/research/local\\_html/univsupp.html](http://www.liv.ac.uk/University/research_and_business/research/local_html/univsupp.html)

Funds are primarily available to support specific, new projects, rather than general or ongoing research interests. Departments are encouraged to offer a contribution towards the costs of the RDF. Therefore, prior consultation with the Head of your division before application is necessary. Grants are usually awarded for:

appointments of vacation scholars;  
research assistant/fellow;  
technical or secretarial assistance;  
travel, subsistence, consumables, items of equipment;  
expenses of a visiting scholar.

The RDF Allocation Group normally meets three times each year, generally in October, February and May. The main aim of the Fund is to “pump-prime” projects, the results of which may go on to form the basis of successful grant applications to outside bodies. The Group is, therefore, looking to support new projects, rather than general ongoing research.

### **Further Information**

All enquiries about the Research Development Fund or requests for current guidelines and application forms should be addressed to Debbie Yates, RBS, Senate House (x 42081; e-mail: [d.yates@liv.ac.uk](mailto:d.yates@liv.ac.uk)).

## **5.4 Engineering and Physical Sciences Research Council**

<http://www.epsrc.ac.uk>

Research grants are the principal mechanism used to fund research projects in universities and other organisations in support of the EPSRC’s mission. The EPSRC provides funds to support research through the award of research grants to eligible organisations. Funds are given for a set period to enable a specific research project to be undertaken. The funding provided is intended to cover the direct costs of a project plus a contribution towards the indirect costs of the host organisation. Some 60% of EPSRC’s annual budget is spent on research grants. The research grants scheme is broad-based and flexible to meet the needs of all programme areas for both mainstream research funding and a variety of more specific requirements. The EPSRC provides research grant support through the responsive mode, the conditional mode and a series of managed programmes. EPSRC and (Particle Physics and Astronomy Research Council) grants attract overheads at around 40% which are invaluable to the University, and feed directly into the Income and Expenditure model. Such grants are also an important performance indicator in the RAE and staff are **strongly** encouraged to apply for research council funds. Currently an incentive payment of £300 is made to members of staff who apply for research council funding.

### **Overseas Travel Grants**

Overseas travel grants are available to fund visits by UK researchers to recognised centres abroad to study new techniques or develop collaboration. Proposals are limited to £20,000 and funds will be limited to travel and subsistence.

### **Visiting Fellowship Grant**

Visiting Fellowship grants provide support for visits by scientists or engineers of acknowledged standing from within the UK or abroad to the investigator's organisation. The support provided can include funds for salary (including indirect costs) and travel and subsistence. Funding is limited to 12 months per individual and will not take account of anticipated inflation over the period of the grant.

### **Senior Research Fellowships**

EPSRC awards a small number of senior fellowships tenable in the UK. Their purpose is to enable outstanding academic scientists and engineers at the peak of their capabilities to devote themselves full-time to personal research and scholarship, free of the restrictions imposed by academic duties. Fellows are, however, encouraged to use available opportunities to contribute to the public understanding of Science and Technology. The awards are not intended to replace sabbatical leave. Applicants must be members of the permanent staff of UK universities, technical colleges or similar UK academic institutions. As with all EPSRC fellowship awards, support is provided for the fellow's salary and fellows are eligible to apply for further EPSRC funding to support their research, subject to eligibility requirements.

### **Advanced Research Fellowships**

EPSRC awards a small number of advanced fellowships tenable in the UK. Their purpose is to support outstanding young research workers so that they can pursue full-time research for a period of up to 5 years. Candidates should normally be under 35 years of age but cases for exceptions, including those involving a return to research after a career break, will be considered. The subject chosen by the fellow must afford scope for original work in any of the fields of science and technology supported by EPSRC and must have the agreement of both the academic institution where the award is held and EPSRC. As with all EPSRC fellowship awards, support is provided for the fellow's salary and fellows are eligible to apply for further EPSRC funding to support their research, subject to eligibility requirements.

## **5.5 Research and Business Services**

<http://www.liv.ac.uk/rbs/>

Research and Business Services (RBS) was established to assist staff to obtain research funding and to provide a point of contact between the University and industry and commerce. The University regards it as vital that members of staff should have every assistance in collaborating with outside organisations in order to carry out the research on which the academic reputation of the University is based. RBS is responsible for the co-ordination of all aspects of research at the University - academic, administrative, financial, legal, ethical and commercial.

RBS also forms the formal link between the University and a wide range of external organisations including the Government Office for the North West, Merseyside Innovation Centre and NIMTECH (The Regional Technology Centre). The Research Support section of the RBS web site incorporates the latest University guidance on costing and pricing of research, contract terms and conditions, and intellectual property and exploitation. It can be located at

[http://www.liv.ac.uk/University/research\\_and\\_business/research/or-supp.html](http://www.liv.ac.uk/University/research_and_business/research/or-supp.html).

## **5.6 Postgraduate Students**

### **Postgraduate Research Opportunities**

The qualifications required for entry are a first or upper-second class Honours degree in Mathematics or in Mathematical Physics or in an equivalent subject. Funding is available from PPARC, EPSRC, NERC, CASE and the Wellcome Trust, and there are opportunities to attend short courses and conferences. Part-time study is also possible. There is also a postgraduate taught course leading to an M.Sc. in Mathematical Sciences.

More details concerning research opportunities, **research activities** in the Department and contact information are given on the departmental web page:

<http://www.liv.ac.uk/math/>

which has entries for the separate divisions of Applied Mathematics, Pure Mathematics, Statistics and Operational Research, and Theoretical Physics.

### **Handbook for Postgraduate Students including the Code of Practice for Postgraduate Students and Supervisors**

The University Research Sub-Committee produces a Handbook for postgraduate students and supervisors. This Handbook provides a basis for the code of practice, and its procedures are assumed to apply where not specifically altered or amplified.

It is available on the web at

<http://www.liv.ac.uk/SED/Handbook.pdf>

### **Careers Service**

The Careers Service is part of the Centre for Careers & Academic Practice, situated on the 1<sup>st</sup> Floor of the Student Services Centre next door to the Guild of Students.

Postgraduate students on a one year course should action their career planning immediately, whereas students on longer courses have a little more time. You are welcome to use all the facilities of the Careers Service, which are as much geared to your needs as those of undergraduates.

Information on all these activities can be gained from calling into the Careers Service or from the website: <http://www.liv.ac.uk/ccap/> Email: [careers@liverpool.ac.uk](mailto:careers@liverpool.ac.uk) or [ccap@liverpool.ac.uk](mailto:ccap@liverpool.ac.uk). The Departmental Careers Liaison Officer is Toby Hall.

### **Key Skills Training**

EPSRC/PPARC organise a series of external one week intensive courses in key skills training. Attendance is free for EPSRC/PPARC funded students and students are strongly encouraged to attend one of these courses during their second year.

Liverpool University has developed a similar in-house course which is held annually in September, designed for students ending their first year of postgraduate training. Attendance is compulsory.

## 5.7 Research Assessment Exercise (RAE)

In 2001 the divisions were rated Pure Maths 5, Applied Maths and Theoretical Physics 5, Statistics and Operational Research 4. The next RAE will be in approximately 2008 but the mechanism is as yet undecided.

For further information check out the web pages <http://www.liv.ac.uk/PAD/rae.htm>.

## 6 Faculty of Science

Below are some examples of instances when you may require liaison with the Faculty of Science. The administrative staff based in the Faculty office have changed significantly over the past 6 months and it is likely that new staff will arrive in the current vacancies. A brief list below of the main contacts along with their responsibilities is listed for your convenience. The Faculty website can be found at <http://www.liv.ac.uk/Science/> and will provide you with more detailed information.

Prof. Jon S. Saunders	Dean of the Faculty of Science
Dr. Grahame Settle	Sub-Dean
Miss. Carla Yates	Secretary to Dean, Sub-Dean and Director of Combined Honours
Dr. Malcolm Taylor	Admissions Sub-Dean
Dr. Steve Hill	Academic Sub-Dean, Director of Combined Honours
Prof. Steve Flint	Director of Postgraduate Studies
Mrs. Linda King	Clerical officer – Admissions
Mrs. Jo Granger	Clerical officer – Postgraduates
Mrs. Susan Heyes	Clerical officer - Undergraduates

For students registered in other faculties the contact person in Math Sciences is Professor Mary Rees.

### **Why might you have dealings with the Faculty Office?**

The Board of Faculty is required to act as guardian of academic standards in the Faculty and the Faculty Office is its instrument. Any circumstances where it is necessary to maintain consistency of treatment are likely to involve the Office. Here are a few questions you may ask yourself in the course of your duties.

### **How are students on my pre-Honours module assessed?**

Soon after the inter-semester, end-of-session and re-sit examinations, there is a Faculty Examiners' Meeting which considers the results of all pre-Honours students in the Faculty and tries to be consistent in making pass/fail decisions. The passing criteria are the same for every non-clinical pre-Honours student in the University.

### **What if a student on my module fails?**

The consequences for the student (and therefore indirectly for you) depend on how bad the failure is when it occurs and on the performance in other modules.

In January or May, failure in an individual module (other than one for which there is no September re-sit) is normally a departmental matter. Failure in a number of



modules, however, may mean in Science Faculty that the student is invited to attend a Dean's Progress interview with a Faculty Officer or another representative of the Dean (not usually the Dean in person, despite the term 'Dean's Progress'). Failure in a repeat year, or failure so bad as to suggest that studies should be terminated immediately, may lead to the student being declared unsatisfactory by the Faculty Examiners' Meeting. A student wishing to appeal against this decision has the right to attend Faculty Progress Committee. You will then be asked to write a report on the student's performance in your module irrespective of its outcome, as the Committee needs as full a picture as possible of the student's work and attendance.

In September, any student failing to satisfy the criteria for passing the year, in whatever way, faces at best a repeat year. The Examiners' Meeting will take the decision between the following choices:

- i) repeat failed modules without attendance
- ii) repeat failed modules with at least partial attendance
- iii) repeat the whole year of study in attendance
- iv) be required to terminate studies.

Option (iii) is available only where there are strongly mitigating circumstances or where the student is being permitted to change course. A student offered either (i) or (ii) will normally be allowed to choose between them, as individual financial circumstances may make one or the other impracticable unless failure in course-work or a poor attendance record makes (i) impossible. Appeal against (iv) will be as in January and May and will again require reports by the student's teachers.

In exceptional circumstances a student may be allowed to carry a failed module (from a pre-final year) into the next year of study, repeating that module with the next year's modules.

#### **What if a student stops attending my module?**

Report to the BSMS who will attempt to contact and interview the student. In serious cases the matter will be referred to the Faculty.

#### **What extra responsibilities do I have as a personal tutor?**

If your tutee is summoned for interview by the Academic Sub-Dean or attends one of the Progress Committees, you may be asked to write a tutor's report on the student. Exceptionally, your tutee may ask you to accompany him/her to Faculty Progress Committee and speak in support of an appeal against termination of studies. If this arises, consult your Faculty Senior Tutor for advice.

If your tutee informs you of absence through illness, you should inform the Faculty Office and, if the absence is of more than a few days, or affects the student's assessment, you should make sure that a valid medical certificate goes to the Faculty Office. If your tutee seeks to be excused from attendance, especially attendance at examinations, you must inform the Faculty Office immediately, because only the Dean or his representative has power to do this and permission will be refused unless there are particularly compelling reasons. If your tutee wishes to suspend registration, you must again ensure that the Dean's approval is sought (via the Faculty Office) and

again, permission is not granted lightly. The Sub-Dean, the Academic Sub-Dean or the Senior Tutors may be freely consulted for advice.

#### **How is a potential student admitted?**

At undergraduate level the formal admission procedure is handled by the Faculty Office through UCAS. The Admissions Sub-Dean and/or Admissions Clerical Officer act in consultation with a member of staff in your department or School and may be freely consulted for advice. At postgraduate level, your department has the power to admit a full-time UK student (with a relevant UK Honours degree) who will carry out their studies wholly within the University, but all other cases will need consideration by the Dean or on his behalf. Mrs Jo Grainger (postgraduate, 43651) and Ms Carla Yates (undergraduates, 43647) may be freely consulted for advice.

#### **What are my responsibilities as supervisor of postgraduates?**

An annual progress report is required on every research student. A blank report form is sent to each research student in July irrespective of the time of year at which the student started research. The student should complete it straightaway and pass it to the supervisor(s), who will add comments. The Head of Department and/or his Director of Graduate Studies countersigns it, adds a comment if necessary, and forwards it to the Faculty Office during the summer vacation. If the report reveals problems, the Sub-Dean will take appropriate action. Other matters involving the Office include requests for suspension or extension of registration and nominations of examiners: decisions on these matters do **not** rest with departments, or even the Faculty in many instances, although well-justified departmental recommendations will usually be accepted.

#### **Do I need to know anything about the Faculty Board or its Committees?**

The Board normally meets once per term and meetings typically last about 2 hours. Members receive agenda papers for a few days before the meeting. All Lecturers are eligible for election to the Board and can expect to receive details of the elections late in the Lent Term. In Science, all Professors, Readers and Senior Lecturers are members of the Board ex-officio. Attending meetings gives you the opportunity to see how the Board conducts its business and to meet staff of other departments. Members wishing to raise particular topics for discussion may seek advice from the Sub-Dean or the Administrative Assistant, about the best way of doing so.

Your Head of Department may ask you to serve as departmental representative on one of the Faculty Committees. If so, you should again receive agenda papers a few days before the meeting and may consult the Sub-Dean or Administrative Assistant about how to raise a topic for discussion. As departmental representative, you should ensure that you can present the departmental view on anything raised for discussion and that you can report important decisions back to your department.

## **7 Personnel Issues**

### **7.1 Leave of Absence**

#### **Firm rules:**

1. If you are absent from the University for more than a week in term time (i.e. during the semester or examination periods) then you must obtain Leave of Absence. Forms

are available from divisional offices. They have to be signed by the Head of Department. For absences of a week or less, you must simply obtain permission from the Head of Department.

2. If you are away abroad on business during vacation, notify the Head of Department, and write to Personnel Department stating where you are going and the period you will be away. [The purpose of this is that the University might ask you to carry out some academic task if it is geographically convenient.]

3. If you are going away in the UK on business during vacation, notify the Head of Department.

4. If the Head of Department wishes to be absent as above, then he or she notifies or obtains permission from the Dean, and a deputy needs to be named.

5. If you have special responsibilities in the department then you must ensure that these will be covered during your absence. Talk to your Head of Division or the Head of Department if in doubt.

#### **In-House Requests:**

1. During term, please ensure that your divisional secretary knows of any days when you will not be available in the University. [The main purpose of this is so that callers can be told when you can next be readily contacted.] A chart is kept in each divisional office which you can also update yourself. It is good practice to put a note on your door for personal callers.

2. During vacation, it is still a good idea to let your divisional secretary know when you will be away, as well as putting a note on your door. The same chart can be used in divisional offices.

## **7.2 Portfolio of Activity**

Each year staff will be asked to set down clearly their research, teaching and administrative activities over the previous 12 months or so. The University has a contributions form which can be viewed at <http://www.liv.ac.uk/~jobs/portform.doc>.

## **7.3 Promotions, etc.**

The webpage of the Personnel Department contains up-to-date information on the timetable for the Annual Review, and the criteria for promotion. See

<http://www.liv.ac.uk/~jobs/R&R1.HTM> for academic staff and academic related staff

<http://www.liv.ac.uk/~jobs/R&R2.HTM> for clerical and secretarial staff, and

<http://www.liv.ac.uk/~jobs/R&R3.HTM> for technical staff.

There is one Annual Review which takes place in April, but exceptional cases can be raised at other times. For promotions to Readerships and Personal Chairs there are two annual rounds, one of which is in November and one in May. All other matters, including discretionary increments for Readers, are treated at the Annual Review. When constructing a CV it is particularly important that the standard format is adhered to. You can view instructions and guidelines regarding CV preparation at <http://www.liv.ac.uk/~jobs/armanual.doc> section B2.

## **7.4 Appraisal**

Appraisal is triennial, except for probationary staff for whom it is annual. See

<http://www.liv.ac.uk/~jobs/appsch.htm>

## **7.5 Staff Development**

All new staff are asked to attend the University Induction Course which is run by the Training Office as part of the Staff Development programme. New staff will also be assigned a mentor, a first contact for any problems that they may face. A new Mentoring Policy was adopted by the University in October 2000 under which mentors will themselves be trained in this task.

At the Departmental level, mentors will report each semester to the Head of Department on matters related to teaching, research and administration.

The Department has occasional discussion meetings. See

<http://www.liv.ac.uk/~aci/staffdev/>

The University runs many short courses for staff development, on topics such as lecturing to large classes, using the voice effectively, enhancing lecturing skills, etc. There are also courses on developing managerial skills. The website to visit is

<http://www.liv.ac.uk/Staffdev/>

## **7.6 University Policy**

The University has a Corporate Plan, which can be viewed at

[http://www.liv.ac.uk/acadsec/local\\_html/corp\\_plan\\_final.htm](http://www.liv.ac.uk/acadsec/local_html/corp_plan_final.htm)

For instance, the Mission of the University is described as follows:

The University was founded “for the advancement of learning and the ennoblement of life”. Its mission is:-

- (a) To ensure that all University activity should contribute to our primary functions which are to teach students and to conduct research.

- (b) To ensure that the University of Liverpool is recognised regionally, nationally and internationally as a distinctive provider of high quality teaching, learning, and research.
- (c) To enhance the University of Liverpool's status as a respected global name in higher education.
- (d) To provide taught programmes of study of a high quality which attract able, motivated students and prove relevant to their needs and the requirements of the employers and sponsors.
- (e) To enhance the volume, quality and commercial relevance of our research.
- (f) To enhance the quality of the student experience at the University of Liverpool.
- (g) To play a full role in the economic re-generation of the City of Liverpool, Merseyside and the north-west of England through the provision of targeted and relevant services.
- (h) To deliver financial stability and security for the University, primarily through the pursuit of revenue generated from activities consistent with the University's mission.

## **7.7 Sickness Reporting Procedures**

The University has recently introduced a new policy for the reporting of any sickness within the Department. Staff are requested to let their divisional office know of any absence from work for whatever reason. Each divisional office then supplied the Sickness Reporting Co-ordinator with staff absences from their division which are then recorded and sent to Personnel. It should be stressed that this is merely a statistical exercise as the University has never held formal records on the number of overall absences within the organisation. It is not a penalty system for staff to be penalised should they fall ill or be absent for any other genuine reason.

As a general guide, absences between 1-3 days should be recorded on a self-certification form available from your divisional office. Absences longer than 3 days normally require a doctor's note to accompany any other documentation. It is recommended that staff who will not be in work telephone their division immediately upon the first day of absence. This is particularly important during term time when classes may need to be re-arranged, cancelled or another staff member required to take over a class. It is also helpful if the staff member in question can keep the office informed of their likely date of return.

The Sickness Reporting Co-ordinator for the Department is Mrs. Frances Poole who can be contacted on ext 44043 or by email at [Frances.Poole@liv.ac.uk](mailto:Frances.Poole@liv.ac.uk) for advice and guidance on the University's policy.

## 8 Academic Services

### 8.1 The Centre for Careers and Academic Practice

The Centre for Careers and Academic Practice (CCAP) is an academic service which provides departments with support for their activities in teaching, learning, staff development and quality assurance. It provides students with a service which enables them to plan effectively for the future, enhances their employability and leads to a satisfactory transition from higher education; and acts as a point of contact for external organisations which are involved with teaching and learning activities and with graduate recruitment.

Further information can be found from the CCAP web site:

<http://www.liv.ac.uk/ccap/index.htm>

#### **Postgraduate Certificate/Diploma in Teaching and Learning in Higher Education**

[http://www.liv.ac.uk/ccap/academic\\_practice/pg\\_cert\\_in\\_he/index.htm](http://www.liv.ac.uk/ccap/academic_practice/pg_cert_in_he/index.htm)

The course is run from the Centre for Careers and Academic Practice (CCAP). If you would like more information, or would like to be kept on the mailing list, please contact CCAP at [ccap@liv.ac.uk](mailto:ccap@liv.ac.uk) or by phone at ext 44647.

### 8.2 The University Library

The University of Liverpool has a particularly good mathematics collection, situated in the Harold Cohen Library. You can access the catalogue via the computer networks. Inter-library loan forms can be obtained from the office. University library matters should be raised with the member of staff with responsibility in this area, currently **Dr. Kai Liu** based in the Statistics Division.

The University Library is a key part of the infrastructure for the support of teaching and research in the University. The Library, with a stock of 1.5 million items, ranks as one of the major research libraries in the country.

There are two main libraries. The Harold Cohen Library contains the main collections in science, engineering, medicine, veterinary science and dentistry; while the Sydney Jones Library houses the arts and social science collections, special collections and archives and the library administration.

Each Faculty has a Subject Librarian who is your main point of liaison with the Faculty and whose responsibility it is to understand departmental teaching and research needs and ensure that the Library supports these in the most effective way possible. Each academic department has a Departmental Library Representative through whom all requests for new books and periodicals should be channelled in the first instance. The Faculty of Science Library Committee meets three times a year and every department in the Faculty is represented on this.

The Subject Librarian for Mathematics is **David Clay** (Tel 45416, Fax 45417, e-mail [dclay@liv.ac.uk](mailto:dclay@liv.ac.uk)).

In addition to maintaining print collections, the Library subscribes to a large number of CD-ROMs, online datasets and electronic journals. Your subject librarian will be able to advise on the use of these and to provide instruction in their use and in the retrieval of information from the Internet generally. The Library's online catalogue is available from any PC attached to the campus network.

Finally you will find the Library's home page describes all the services offered by it. It is also a useful access point for electronic information:

<http://www.liv.ac.uk/library/> also see [http://www.liv.ac.uk/library/info/libinf\\_hcl.html](http://www.liv.ac.uk/library/info/libinf_hcl.html)

### **8.3 Computing Services Department**

The Computing Services Department (CSD) provides staff with a wide range of Computing and Information Technology facilities. Some University departments do possess their own computer systems, but these frequently run software provided by CSD and exploit the networking facilities which are installed and managed by CSD.

Training courses in all University supported software are held during term time throughout the year. A recently introduced programme is the European Computer Driving Licence (ECDL) which staff at the University are able to participate in. Full details are available at <http://www.liv.ac.uk/CSD>.

The web page of CSD is

<http://www.liv.ac.uk/CSD/csdhome.html>

### **8.4 Organisation of the University**

Full details regarding the organisation and all administrative functions and offices in the University of Liverpool can be found at the following web page.

<http://www.liv.ac.uk/administration/>