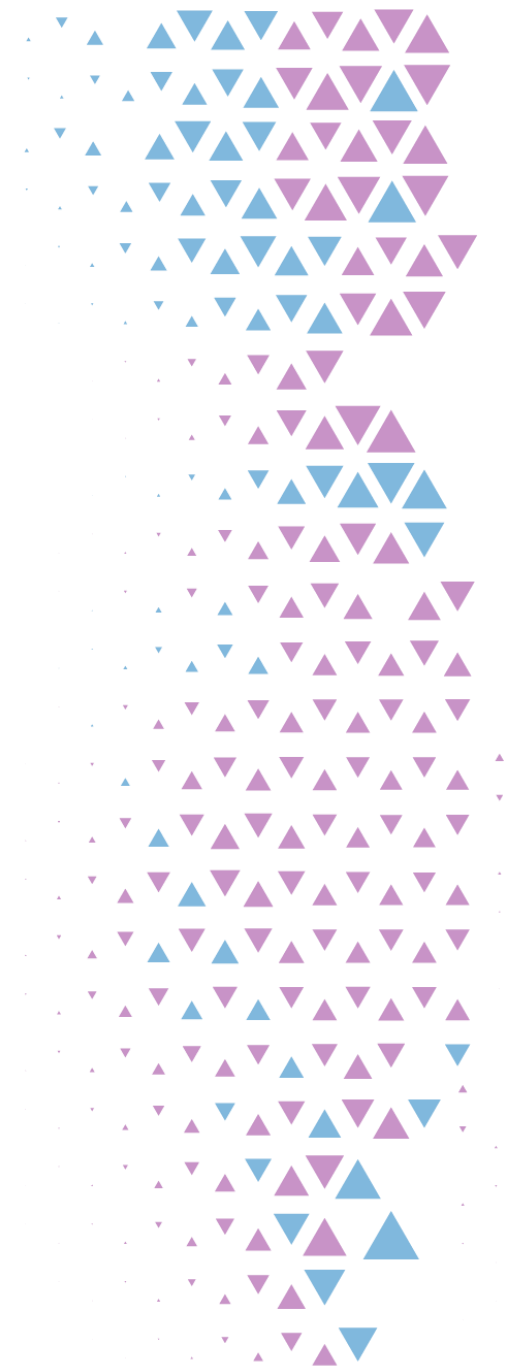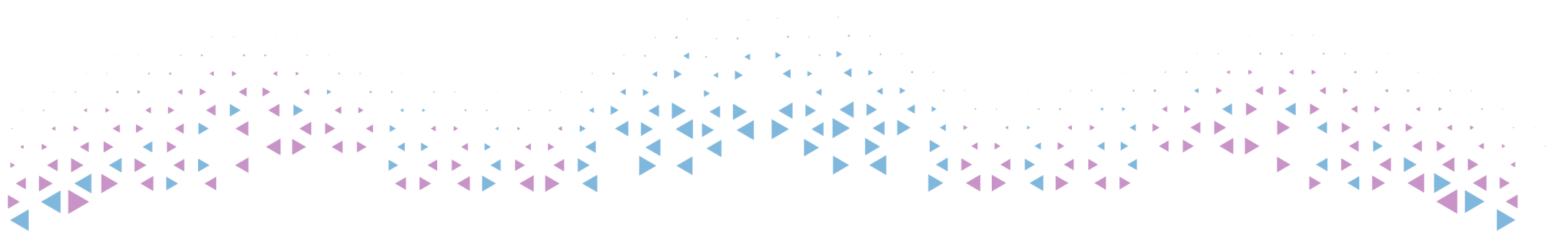# Informatics Training Scheme 2020 Workshop

Workshop

1. Introduction to Translation Manchester and the scheme
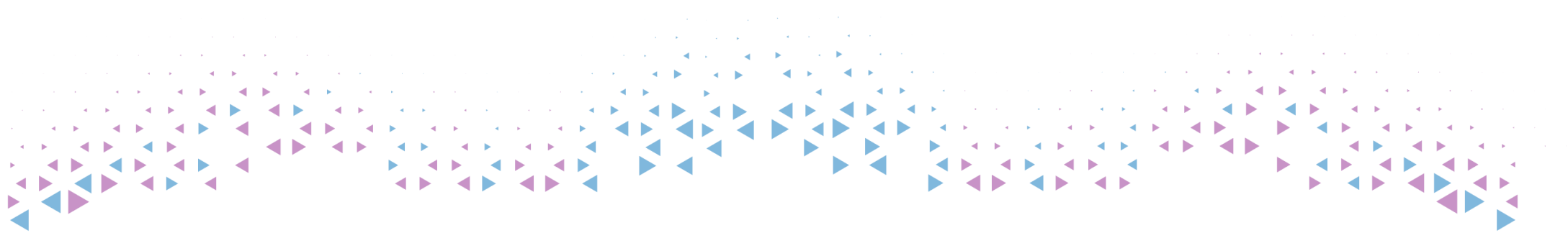2. Overview of the courses and units on offer
3. Q and A

Introductions

Dr Mudassar Iqbal

Lecturer in Health Data Sciences and Academic Lead for the Informatics Training Scheme

Dr Alessandro Faroni and Dr Becky Bibby

Translational Research Facilitators (TRFs) at Translation Manchester

Translation Manchester

- <u>Translational research</u> is the process by which basic scientific research is translated into patient focused research that improves healthcare and wellbeing within society.

- <u>Translation Manchester</u> facilitates and supports the progression of scientific discoveries towards the delivery of improved healthcare.

- Translation Manchester is funded by a <u>Wellcome Trust Translational Partnership Award (TPA)</u>.
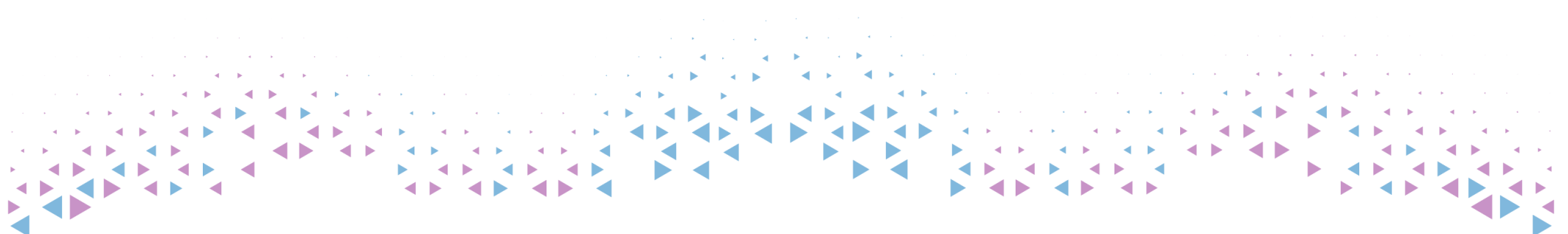
Informatics Training Scheme

- Access to informatics expertise has been identified as a hurdle for translational researchers at UoM.

- This scheme has been established to provide researchers with informatics training and skills which they can apply to their research projects.

- Successful applicants will be offered a place on the scheme and the teaching fees will be covered by Translational Manchester.

- Places on the scheme are funded per unit, this year funding is available for 60 unit places and applicants can apply for a maximum of two units.

How do I apply?

- Use the brochure to select **up to two units**

- Complete and return the online application form

- Application deadline **5pm Wednesday 9th September**

- At the end of your training you will be asked to complete an end of training report

https://www.translation.manchester.ac.uk/training/

Training

Informatics Training Scheme

Access to informatics support has been identified as a translational bottleneck for researchers in Manchester.

To address this bottleneck, Translation Manchester is offering training to provide this expertise and upskill translational researchers.

This call is currently OPEN.

A Zoom workshop about this scheme will be held on Thursday 27th August 2020, follow the link to register.

For further information, please download the following documents:

- Informatics Training Scheme 2020 brochure
- Terms and conditions
- Informatics training application form

Translational Pathway

2. Which translational research skills are you seeking to gain or develop from the course(s) and how will these skills be implemented in your research to enable progression along the translational pathway *(word limit 150)*?
Would these new skills be immediately beneficial to a project or data set that you are working on now?
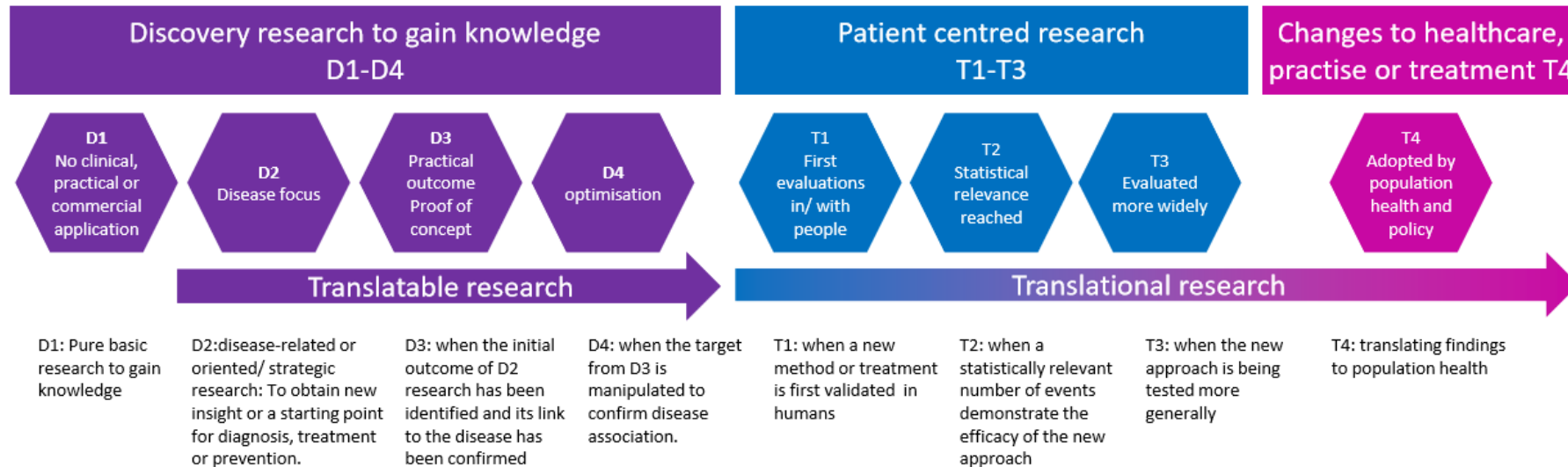
Courses and Units
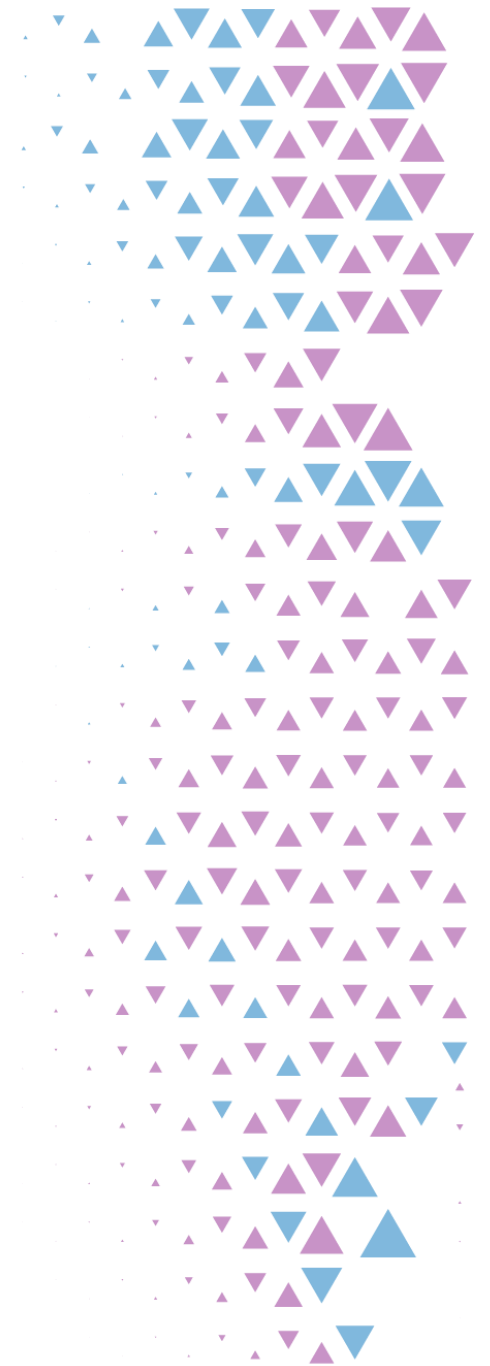
MSc Bioinformatics and Systems Biology

This course aims to:

- provide a biological background to the data types of genomics, proteomics and metabolomics;

- develop the computational and analytical understanding necessary as a platform for processing biological data;

- demonstrate applications and worked examples in the fields of bioinformatics and systems biology, integrating with student involvement through project work.

The taught part of the course runs from September to December and consists of 60 credits delivered from four 15-credit units, all of which are open to application in this scheme.

- Bioinformatics

- Programming Skills

- Computational Approaches to Biology

- Experimental Design and Statistics

PGCert Clinical Bioinformatics

Course overview

Our fully-online PGCert is a practical, clinically-focused course aimed at providing the necessary skills to produce high quality bioinformatic workflows to analyse and interpret clinical genomic data.

Studying units such as next generation sequencing and an introduction to programming, you'll extend your knowledge of critical methods of genomic analysis.

1 Introduction to clinical bioinformatics

- Provide background knowledge of human genomics with particular emphasis to the clinical setting
- Application of next generation sequencing technologies in the clinic
- Introduction of basic next generation sequencing and how resulting genomic data is analysed

2 Introduction to health informatics

- Health informatics and the influence on the delivery of healthcare
- The electronic patient record and the importance of coding healthcare delivery consultations
- The human and organisational factors that are considered when introducing informatics solutions

3 Introduction to programming

- Introduction to programming
- Safe and effective software development practice
- Develop practical programming skills

4 Introduction to next-generation sequencing

- Extend your knowledge of the wide range of bioinformatics pipelines, tools and resources
- How these tools are used by clinical bioinformaticians to support patient-centred care, diagnosis and treatment
- Look at the ethical and confidentiality issues that arise with such sensitive data

MSc Genomic Medicine

This course will train healthcare professionals from different disciplines (e.g. medicine, nursing, scientists and technologists) in genomic knowledge that will impact on their service delivery to patients.

There are 14 units in this course, of which 4 have been selected for inclusion in the scheme.

- Bioinformatics, Interpretation, Statistics and Data Quality Assurance

- Next Generation Sequencing and Omics in Medicine and Disease

- Health Informatics

- Economics of Genomic and Precision Medicine

MSc Health Data Sciences

This course aims to create a new breed of scientist who can understand the healthcare sector and medicine, how data is collected and analysed, and how this can be communicated to influence various stakeholders.

There are 8 units in this course, of which 3 have been selected for inclusion in the scheme.

- Fundamental Mathematics & Statistics for Health Data

- Health Information Systems and Technologies

- Biomedical Modelling for Health Data

MPH Public Health

This course meets the training needs of health professionals around the world who are interested in a career in public health or those seeking new skills in this area.

There are 31 units in this course, of which 4 have been selected for inclusion in the scheme.

- Fundamentals of Epidemiology

- Digital Public Health

- Implementation Science

- Practical Statistics for Population Health

Research Methods

These units are self-led five credit units;

- Introduction to Statistics- develop your statistical thinking so you become critical consumers of statistically-based results in biomedical and health research

- Introduction to Python Programming- develop your Python programming skills and use the tools, problem solving methods and use basic principles of Python

- Introduction to Machine Learning- develop your knowledge and understanding of the importance of data management and quality.

Massive Open Online Courses (MOOCs)

The courses are freely accessible online.

Please notify us via email if you register for a MOOC course, <u>you do not need to be awarded a place on the scheme</u> to register and take part in these free courses. You will be asked to complete the end of the training feedback report.

- Clinical Bioinformatics: Unlocking Genomics in Healthcare
- AI for Healthcare: Equipping the Workforce for Digital Transformation

Making the right choice: Overlapping content in multiple courses

MSc Bioinformatics & Systems biology

- Programming Skills
- Bioinformatics

PGCert Clinical Bioinformatics

- Intro to Clinical Bioinformatics
- Introduction to Health Informatics
- Introduction to Programming
- Introduction to Next Generation Sequencing

MSc Health Data Science

- Fundamental Mathematics & Statistics for Health Data
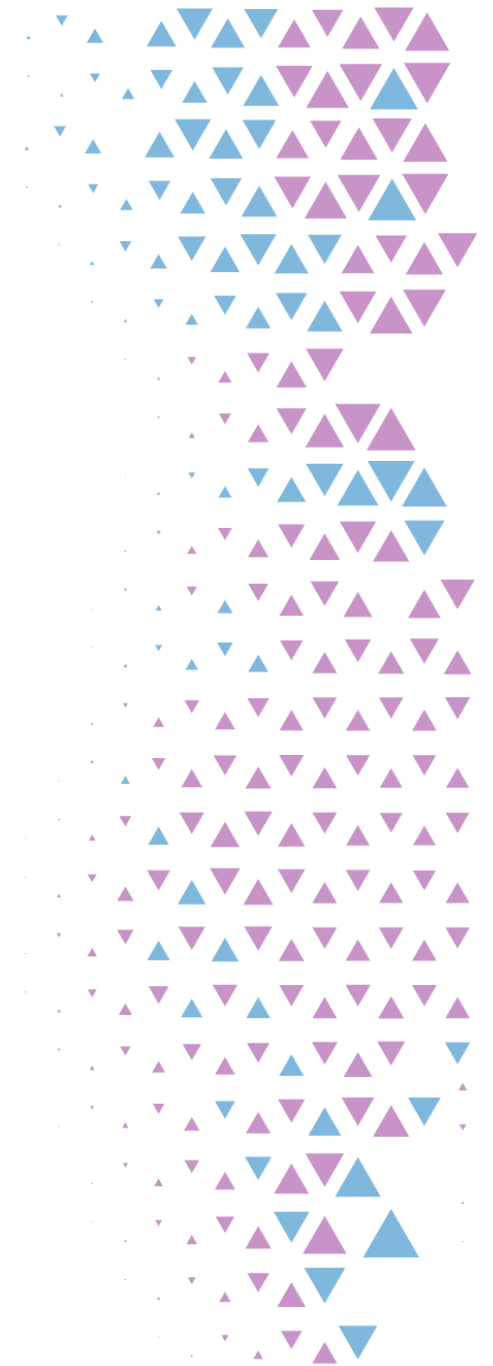
MSc Genomics Medicine

- Bioinformatics, Interpretation, Statistics and Data Quality Assurance
- Next Generation Sequencing and Omics in Medicine and Disease

Research Methods

- Introduction to Statistics
- Introduction to Python Programming

Q and A

- I have data from whole exome and panel sequencing. I am experienced at analysing sequencing data. For studies of the association of rare variants with SLE, I would like to learn how to carry out rare variant association tests such as SKAT-O, burden and variance tests. I have very basic knowledge of RStudio (running basic ANOVA for example). Would any of the courses cover this type of content?

- I am second year PhD student, but am currently in Singapore. I am very interested in a couple of course units on offer (*Next Generation Sequencing and Omics in Medicine and Disease BIOL67562* and *Bioinformatics, Interpretation, Statistics and Data Quality Assurance BIOL67981*). Do you know yet roughly what time sessions will be scheduled for these?

- Could you please let me know what are the major differences between *Self-paced course Introduction to Statistics* and *Statistics & Experimental Design BIOL65161* in terms of the course material? I was wondering whether the BIOL65161 is a more in-depth course or they cover the same material? And if the BIOL65161 is a higher-level course, would it be possible to complete the unit at a more flexible pace?

- Can I apply for more than one unit within a single course?

- For individual units in a course, is it required to take the preceding 'basic' units e.g. do I need to take "Bioinformatics" unit in order to qualify for the "Computational Approaches to Biology" unit within the MSc Bioinformatics and Systems Biology course?

Answers to these questions are covered in the workshop video recording.

FAQs

When does teaching start on each on these units?

Units are delivered during semester 1 (teaching starts October 5th) or semester 2 (teaching starts February 8th). See the brochure for more details. The Introduction to Health Informatics unit BIOL60110 starts on Monday 7th September, enrolment of students on this course will be prioritised after the application deadline has passed. There is an induction to the MPH course on the 15th and 16th of September for participants taking POPHXXXXX units and teaching will start on the 21st September.

Can I apply if I have been furloughed?

Yes furloughed staff are eligible to apply as long as their current contract covers the teaching period of the units applied for.

How is the decision made on who to offer places to?

The Translation Manchester Team and Academic Leads will review applications and places will be offered based on how the skills gained through the training will be implemented in the applicants' ongoing research. Teaching capacity and the funding we have available for the scheme will also be considered in the decision-making process.

When can I expect to hear the outcome of my application?

Applications for the PGCert Clinical Bioinformatics and MPH units will be prioritised after the deadline to ensure enrolment on these courses can take place before teaching starts. All applicants should expect to hear the outcome of their application within 2 weeks of the deadline.

Do I have to take part in the assessments?

Individual assessments are not compulsory, if you wish to take part in the assessments please contact the cubit co-ordinator after you have been enrolled on the course. Assessments will be marked at the discretion of the unit co-ordinator. Participation in group work and online group discussion forms is compulsory, unless the unit co-ordinate says otherwise.

How do I access the online course?

After accepting a place on the scheme you will be enrolled and the course materials will be accessible through blackboard.

FAQs

Do I need to submit an application to take part in the MOOCs?

You do not need to submit an application form to take part in the free online MOOCs, however we ask that you notify us by email if you have registered for a MOOC course and we ask that you complete the end of training feedback report.

How much time do I need to commit to the training?

This varies between units, follow the 'more details' links in the brochure to find out the time commitment for a specific unit.

How are the teaching fees associated with my place on the scheme paid?

Translation Manchester will make the necessary arrangements for the teaching fees to be paid from the TPA budget.

My supervisor is on annual leave and won't be able to provide a statement of support before the application deadline. Can I still apply?

In this case you can apply without the statement of support, but please notify your supervisor that you have applied for the scheme and provide the name of your supervisor in your application. If necessary, Translation Manchester can approach you supervisor after the application deadline has passed.

How many places are available on each on the units?

Capacity on each of the unit is variable and will be determined by the number of students enrolled on the course.

If I am offered and accept a place on the scheme, what happens next?

You will be enrolled onto the course units and will be able to access the online teaching materials through blackboard.
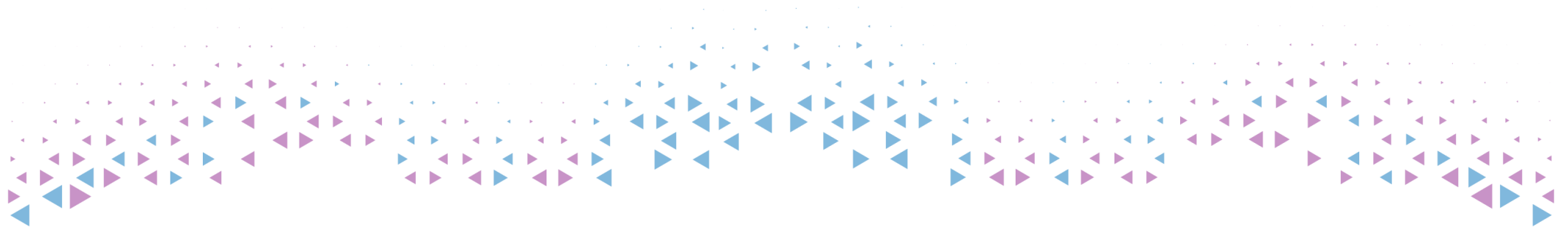
FAQs

If there are no places available on the units I apply for can you offer me a place on a related unit that still has places available?

Some unit do have similar or overlapping content. If the unit you have applied for does not have sufficient space to accommodate you the Translation Manchester team maybe in touch to offer you an alternative option.

My current contract ends during the teaching period of the unit I am interested in, can I still apply?

You cannot apply for a unit if your contract does not cover the duration of the teaching period at the time of applying to the scheme.

Will I be asked to provide feedback at the end of my participation in the scheme?

Yes, you will be asked to complete an end of training report.

Will there be any face-to-face tutorial/workshops/practicals or lectures held on campus that I am expected to attend?

Some units will include face-to-face sessions, these will be held in line with government guideline. The PGCert and MPH unit are delivery entirely online. For other unit follow the 'more details' link in the brochure to find out more.

If you have any further questions, please email us translation@manchester.ac.uk .