

The Institute of Science and Technology Accreditation and Quality Mark Schemes

A Guide for Accredited Partners

March 2024



Introduction:

The IST Quality Mark will enable institutes to gain accreditation against individual AI modules that may be part of programmes not traditionally linked with awarding RTechAI and allow individuals the opportunity to gain individual recognition.

In offering accreditation, the IST has **three** major objectives:

To introduce more flexibility in the benchmarks for accrediting qualifications. By developing a set of standards that programmes will need to meet we aim to widen the potential scope of our accreditation beyond that of the previous graduate diploma syllabus. The IST will accredit only those programmes that deliver the skills and knowledge which will be required by students on their journey to becoming an accredited AI Practitioner and which appropriately assess students against these criteria.

To introduce a modular form of recognition called the IST Quality Mark. The IST Quality Mark aims to accredit a wider range of good Ethical AI training. Aimed at accrediting the quality the individual module/course represents, this Quality Mark will enable individuals to gain recognition for AI Practitioner training and help them complete different competencies as they work towards becoming an accredited professional.

To build stronger partnerships with Ethical AI education providers in the UK and abroad. We have already built good relationships with education providers but as a modern professional body we recognise that an important role exists for the IST to facilitate a dialogue between providers about new developments in Ethical AI education and how they should be delivered. Through this process we will ensure that our accreditation standards continue to reflect changing needs across a broad range of sectors of employment.

Accreditation will be the process through which the Institute of Science and Technology works with education providers to ensure that programmes in Ethical AI meet quality standards. We will work collaboratively with education providers to accredit, help, and develop the quality of and increase the relevance of programmes to students. Our accreditation process is designed to be straightforward and aims to reduce the administrative burden associated with accreditation by encouraging providers to utilise their existing documentation when putting together an application produced for QAA, Ofsted or their own internal monitoring.

Benefits of Accreditation:

The IST has the responsibility to develop and maintain standards in educational qualifications for those individuals who wish to follow a career in Ethical AI. The IST accreditation and Quality Mark scheme is an important benchmark for higher-education programmes as well as commercial training-providers.



Becoming an IST-accredited partner provides an institution and its students with a range of benefits through the IST's accreditation scheme:

1. **Recognises excellence:** Reflecting an institution's commitment to providing high-quality learning, teaching and assessment, where approval has been granted, accreditation partners can use accredited logos on their website, certificates and publicity materials.
2. **Increases the marketability of programmes in a competitive marketplace:** Institutions will receive a listing on the IST website and the IST refers potential students to our list of accredited programmes.
3. **Provides students with a route to IST membership:** All students on an accredited programme will be eligible for student membership of the IST with the potential to progress along the professional pathway of IST membership.
4. **Provides students with a competitive edge in a challenging job market:** The IST brand is regarded as a mark of quality that is valued and understood by prospective students and employers. Accredited institutions with full programmes accredited can also nominate an exceptional graduate for annual IST prize of one year's free membership.
5. **Provides employees with an assurance of the level of technical skills and knowledge provided by a programme.** It supports relationships with employers and helps to achieve employment outcomes for your employees.

Cost of Accreditation:

The IST charges an application fee for institutions applying for accreditation and those successful in their application pay a yearly subscription for the duration of the accreditation, usually 5 years. The application fee includes the 1st year's subscription. An institution can apply for as many or as few programmes and/or modules to be accredited the pricing structure is tiered depending on how many are put forward for accreditation. The table below sets out the fees and annual subscriptions for both the full IST programme accreditation and the IST Quality Mark scheme. Please note that the application fee is based on how many individuals are put forward. If applications are successful the yearly subscription is based upon how many applications were successful. An Institution will not be charged going forward for those applications which were unsuccessful.

<i>IST Accreditation fees</i>	Application fee	Subscription Year 1	Subscription Year 2	Subscription Year 3	Subscription Year 4	Subscription Year 5
1-5 courses	£2000	Free – covered by the application fee	£2000	£2000	£2000	£2000
6-10 courses	£2500		£2500	£2500	£2500	£2500
11+ courses	£3000		£3000	£3000	£3000	£3000



<i>IST Quality Mark fees only</i>	Application fee	Year 1	Year 2	Year 3	Year 4	Year 5
1-5 modules	£1000	Free – covered by the application fee	£1000	£1000	£1000	£1000
6-10 modules	£1500		£1500	£1500	£1500	£1500
11+ modules	£2000		£2000	£2000	£2000	£2000

The invoice for application fee is issued upon receipt of an ‘Expression of Interest’ form. This will not prevent the completion of the application in the meantime. The annual subscription is subsequently invoiced usually in the September of each year.

Institutions applying for accreditation may also incur costs associated with any reasonable expenses incurred by the IST, including travel expenses, during a visit to the applying institution. Visits are usually required within the first 12 months of accreditation being awarded in a support capacity. In some cases visits may be required whilst the application is being assessed. Those institutions based overseas will be expected to cover all expenses incurred.

Standards & Criteria:

IST Full Programme Accreditation:

For degree programmes, achieved through either the study of modules or course units with IST Quality Mark (see text below for a definition of the term - IST Quality Mark). A degree programme will be eligible for accreditation if it demonstrates the following learning outcomes for graduates (*a full definition with learning outcomes can be found within **Appendix 1***):

A registered practitioner has good knowledge, the practice of, and ability to:

- Apply knowledge and expertise appropriately and effectively to practical and real problems.
- Demonstrate good understanding of the relevant field, industry and its interactions.
- Demonstrate accountability for work and understand the impacts and risks to society and the user.
- Use robust processes and have good awareness of relevant policies and regulation.
- Ability to work within interdisciplinary teams constructively, to illustrate and communicate ideas and information effectively and to discuss issues in an objective and constructive manner.
- Apply knowledge appropriately, competently and be self-critical in terms of all aspects of data handling; and the testing and validation of models..



- Demonstrate professional conduct, exercise integrity and adhere to relevant code of conduct.
- Show continuing professional development and progression.

They are aware of the implications of their work for the rights of individuals and wider society, maintaining the highest ethical standards at all times.

The IST recognises the numerous manner in which a person can become a competent and trustworthy AI Practitioner, and that the range and depth of study associated with each of the learning outcomes will vary across different degree programmes. The IST recognises that these outcomes may be achieved within degree programmes or pathways with a variety of titles, and may combine these outcomes with others such as mathematics, computing, data engineering, philosophy, sociology or other substantive subjects.

In order to obtain accreditation for a degree programme, providers should:

- briefly describe how the programme delivers each graduate learning outcome. For example by indicating the quality marked modules in which students can demonstrate achievement in one or more of these outcomes
- the % of students successfully completing the programme over the last 3 years
- compliance with a relevant independent university quality assurance procedure
- action taken to ensure widening participation and diversity on the programme.
- describe how the department offering the programme engages with the IST, e.g. how students are encouraged to take up membership
- report how many teaching staff on the programme are AI Accreditation holders.

The IST understands that it may take some time for institutions to adapt to the new requirements that set out here, especially those on communication and ethics, and that changes to curricula and teaching can take some time to effect. The IST is therefore prepared to accept for accreditation degree programmes that do not yet fully meet all the requirements, provided that there is both a commitment to meet them and progress towards fulfilling these requirements.

Shifting the ‘unit of analysis’ for degree programmes from the programme as a whole to the modules it comprises, enables the IST to deal more effectively with the diversification of degree programmes and pathways within them. This shift enables the IST to accredit several degree programme variants in any university by focusing on their constituent components, which are typically common to many degree programmes and pathways. As it is explained below, by introducing accreditation based on individual modules, it is possible to broaden the range of university teaching which is reviewed and regulated by the IST, and similarly for teaching offered by



other providers. Accreditation of degree programmes will be based on a review of the coherence and volume of modules with IST Quality Marks which comprise the programme.

The IST Quality Mark:

The IST bases its assessment of the relevance and standard of AI education and training by awarding an **IST Quality Mark** to **modules**. The term **module** is used to refer to any distinct course of study of any kind, at any level, on any aspect of AI, in which student achievement is assessed, whether by either formal examination or coursework, or forming part of a record of achievement as attended. Modules could be delivered by a school, college or university, either *in situ* or remotely, as a standalone qualification, as CPD, or as part of a degree or other larger programme of study.

The IST **Quality Mark** is based on evaluation of four criteria:

1. Learning Outcomes
2. Content and delivery
3. Assessment and achievement
4. Review

These criteria are evaluated by reviewing module documents, plus some additional evidence. Module documents are any brochures, prospectuses, course outlines, curricula or any other documents used to describe the module to prospective or current learners. The table within **Appendix 2** at the end of this document suggests the additional evidence that is likely to be relevant. The evaluation is designed to be 'light touch' insofar as a minimum of information and documentation is required beyond that which providers will normally prepare for the delivery of a module. Accreditation of degree programmes will be based on a review of the coherence and volume of modules with Quality Marks comprising the programme.

How to Apply:

Firstly, an applicant completes an expression of interest form below to begin the process (found below). The expression of interest form is received by the Head of Professional Standards & Accreditation at the IST.



Appendix 1:

To fulfil the requirements for full programme accreditation, graduates must meet the criteria below:

Graduates have the ability to:

Competency	Guidance	Associate (Early Career Professional – Ofqual L5 or equivalent)
I. Knowledge, Understanding and Application	Has relevant knowledge and understanding of their field and applies their expertise in an appropriate manner.	<ul style="list-style-type: none"> ● Has the requisite knowledge/training to engage in the project/study. ● Applies appropriate current methodology. ● Interprets and evaluates models, data and output appropriately.
II. Ethical Responsibility	Accountability Implementation on society Users Stakeholders Robust processes	<ul style="list-style-type: none"> ● Able to research and apply ethical modelling principles. ● Knows when to seek guidance from others. ● Maintains quality and applies ethical working practices ● Raises awareness of issues within the model including limitations and caveats
III. Interpersonal Skills and Communication	Ability to work within interdisciplinary teams constructively, to illustrate and communicate ideas and information effectively and to discuss issues in an objective and constructive manner.	<ul style="list-style-type: none"> ● Demonstrates effective communication, interpersonal and behavioural skills. ● Works effectively with others. ● Able to explain complex ideas within their specialist field to non-specialists effectively.



<p>IV. Critical Evaluation</p>	<p>Applies knowledge appropriately, competently and self-critical in terms of all aspects of data handling; and the testing and validation of data-based models.</p>	<ul style="list-style-type: none"> ● Able to collect valid and appropriate data for the project/study. ● Understands model assumptions and real world differences. ● Highlights possible problems with models. ● Can test and validate models.
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Students are aware of the implications of their work for the rights of individuals, maintain the highest ethical standards and work for the public good. The applicant can use this knowledge to:

- research and apply the principles of ethical modelling and maintain quality in their work.
 - Quality is demonstrated by the applicant being a role model for others in their field and by continuously demonstrating an understanding of how to select and apply ethical frameworks. The applicant should understand contemporary developments in ethics and demonstrate practical implementation in relation to modelling.
- work effectively as part of a team and communicate clearly.
 - The applicant should be capable of building positive relationships with individuals and as a part of a team. The applicant should understand how and when to challenge colleagues within the framework of the overall goal of a project, and should be able to communicate effectively with those outside of their specialised discipline and to explain technical detail clearly.
- seek advice from colleagues when necessary in order to uphold ethical principles.
 - The applicant should be able to identify shortcomings in the approach of a project and to seek guidance from external sources to rectify associated issues, including when to escalate ethical concerns to superior authorities. Applicants should understand how to remediate ethical issues in a technical, social and institutional capacity. As a part of this, applicant must abide by their institution’s codes of conduct and all relevant legal requirements.



Appendix 2:

Criteria for the IST Quality Mark

Criteria	Suggested Additional Evidence
<p>The module has clear learning outcomes which</p> <ul style="list-style-type: none"> form part of the skills and knowledge expected of a graduate of AI & Ethics or enable progression towards them are relevant to the programme of study in which it is taught, or (for 'stand alone modules') provide a coherent view of statistics within a problem solving framework appropriate for the range and level of skills that learners bring to the course match the content of the module and its delivery. 	<p>A brief account of the skills and knowledge expected on entry to the module (if this is not in the module documents). Opportunities for study on completion of the module.</p> <p>Modules set at levels below NQF6 (degree) should deliver learning outcomes appropriate to their level which enable progression towards the graduate level outcomes.</p>
<p>Module content matches the learning outcomes.</p>	<p>Whilst the quality mark does not specify any particular content, it does require the content to have a coherent and explicit link to the learning outcomes.</p>
<p>Appropriate attention is given to the mathematical foundations of practical applications, and to the practical application of theory and mathematics, as well as the communication and presentation of results.</p> <p>Where relevant, students gain experience of working with realistic, large datasets and/or solve problems relating to data in context.</p> <p>Where relevant, students use appropriate software.</p>	<p>Purely theoretical or mathematical modules are eligible, as long as they form part of a programme of study in which their application is taught and assessed. So too may purely practical modules (e.g. on 'consulting') as long as they form part of a programme of study in which their theoretical and mathematical foundations are taught and assessed.</p> <p>'Cook book' and 'Point and click' approaches or the learning of formulae outside a context of application are specifically discouraged.</p>
<p>The fundamental importance of integrity, ethics and data security are taught.</p>	<p>Any modules dealing with empirical data should stress the obligation to collect, manage, analyse, report or curate data ethically.</p>
<p>The delivery, learning hours and modes of study (e.g. lectures, lab work, seminars, online resources, self-study) are appropriate to the module content.</p>	<p>The material supplied should be detailed enough to allow assessors to judge whether the content matches the learning outcomes and are reasonably achievable given the skills and knowledge of students accepted on to the module. The format of the evidence is not important. Existing documents are preferred to any prepared specifically for accreditation.</p>
<p>The assessment used allows students to demonstrate their achievement of the learning outcomes. A substantial majority of students will successfully achieve these outcomes.</p>	<p>Examples of course assessments.</p> <p>Proportion of students successfully completing the course / passing the assessment.</p> <p>Diversity in modes of assessment are encouraged. Some modules may not be formally assessed (e.g. student placements). As long as these form part of a coherent programme of study they are eligible for the quality mark .</p>



<p>The course has been designed, delivered or reviewed by an APAI holder or a suitably qualified member of staff of a university or college AI department, subject area or group.</p>	<p>Name(s) of those involved and meeting criteria.</p>
<p>The module sits within a recognised independent quality assurance programme that reviews</p> <ul style="list-style-type: none"> • Teaching quality • Student support, feedback and consultation 	<p>Statement of compliance with relevant QA procedures.</p>
<p>The course addresses software risk, transparency and use.</p>	<p>Software being used should be selected carefully and the transparency, risks and use cases should be shared with students prior to use</p>
<p>The module is adequately resourced.</p>	<p>Staff student ratios; staff time available to teach the module; library computing or study resources available to students.</p>



Expression of Interest Form

Name of institution

Name of School/Department

Name of lead contact – Title/Forename/Surname

E-mail address of lead contact

Address for invoice

Addressee for invoice

Purchase order number for invoice (if applicable).....

Are you applying for a module or training course to be accredited with the IST Quality Mark
Please Circle ... Yes/No

Please indicate the number of modules/courses you would like to have considered for accreditation
of the IST Quality Mark
.....
.....

Please note that you will be invoiced according to the most up-to-date prices listed on our website
here. Your expression of interest will be received and reviewed by our Head of Professional
Standards.

Please send this form to office@istonline.org.uk with Quality Mark as the Subject Header.

