



THE INSTITUTE OF ANATOMICAL SCIENCES

Syllabus Guide for Diploma of Anatomical Science and Technology

Please Note – This document is the Syllabus Guide only – to receive the Complete DATS Handbook, and to submit modules, please register for the Diploma via the Education Officer. DATS is available to all IAS Members.

Introduction

It has been recognised for many years that technical staff in Anatomy, Pathology and other related departments have not been able to study for a qualification that was relevant to their profession. As a consequence the Diploma was introduced by the Institute of Anatomical Sciences (IAS) in the late 1990's, adapting it initially from an in-house scheme introduced in the Department of Anatomy at Bristol University for training new technical staff. The Diploma has evolved and developed over time to become the Diploma in Anatomical Technology and Science (DATS) a recognised qualification within the field not just in the United Kingdom but throughout Europe.

The syllabus has been designed to appeal to both established staff and those entering the field. It is the aim of the IAS that the scope of the Diploma unit will provide a sufficient level of knowledge and technical training / skills base to cover most of the duties of technical staff involved in this line of work. The Diploma also provides for development and training in some of more advanced skills and techniques that are also used in the field. The syllabus has been constructed to incorporate both theoretical and practical elements of modules, allowing candidates to progress towards the Diploma or an Advanced Diploma in Anatomical Technology and Science. Candidates may feel that some areas are not relevant to them personally, but should remember that if they were to move to another place of employment, it might become part of their daily workload.

The Diploma comprises fifteen integrated theory and practical modules so as to appeal to as wide a candidate base as possible. To achieve the Diploma, candidates must complete 8 of the 15 modules and 2 viva examinations. The majority of training will be completed in the candidate's own work environment; however, where facilities are restricted, IAS-approved workshops can be attended to develop the required training and skills to complete a module. To complete the Advanced Diploma, candidates must choose four of the remaining modules and *either* write an article for the IAS Journal *or* present a 30 minute talk at an IAS Meeting for each of the four modules.

This staged structure also allows candidates to find and reach their own level of achievement and to attain Accreditation Points towards their membership status within the Institute of Anatomical Sciences.

The modules are designed to be completed in the candidate's own work environment at their own pace. There is no time limit! Each component submitted will be assessed according to the criteria outlined. The establishment of the Diploma aims to provide a national technical standard, which will be recognised by employers in the field both nationally and internationally.

Aims and Objectives of the Diploma

Aims

To provide an opportunity for candidates to develop a knowledge and practical skills base, common to Anatomy, Pathology and related Technical Staff - world-wide.

Objectives

On completion of the Diploma candidates should have gained theoretical background knowledge and had an opportunity to gain experience in and develop practical skills in a range of topics, which they can choose from the following list of modules:

Module 1	Preservation of cadavers/specimens
Module 2	Producing a specimen using Dissection/Prosection techniques
Module 3	Museum techniques - Pot construction and wet/dry mounting of specimens
Module 4	Museum techniques – Osteology and Preparation of Skeletal material
Module 5	Museum techniques – Injection and Impregnation Techniques
Module 6	Museum techniques – Model-making
Module 7	Museum techniques – Embedding, Casting, Coating
Module 8	AVA – Production (filming and editing) a Digital Format for streaming online/writing to a DVD or Production of a Computer Aided Learning tutorial or quiz
Module 9	AVA - Photography, Poster-making and Teaching displays
Module 10	Histology - Preparation and production of histological specimens
Module 11	Administration and Management of a Teaching/Research Unit
Module 12	Health, Safety and Hygiene in the Laboratory
Module 13	Specific Workplace Legislation including, but not limited to: Human Tissue Act 2004, Animals (Scientific procedures act) 1986, C.O.S.H.H., Data Protection Act
Module 14	Knowledge of Anatomy and related sciences - Pathology, Physiology etc
Module 15	Job-related speciality

Additionally the Diploma has been designed to enable candidates to obtain and/or improve transferable, life skills including:

- Essay and Report writing and formulation
- Organising and managing data
- Oral communication
- Effective researching skills and note taking
- Problem solving
- Basic IT skills
- Time management
- Presentation skills

Diploma Structure

The Diploma comprises of the completion of eight of the 15 modules and 2 viva examinations. The write-ups for the 8 modules must incorporate both theory and practical elements associated with the module. The choice of modules offers the candidate flexibility in order to accommodate differing work environments, whilst also encouraging candidates to research and develop practical skills in new areas of anatomical, pathological and veterinary technology and science including those, perhaps, not part of their daily duties.

The candidate would be expected to research a topic and show a good understanding of the subject area and the skills involved to carry out a particular task or element. They will be required to critically analyse the subject field and to fully reference previously written work on the subject. This will help demonstrate an increased understanding of the modules studied and the related skills needed.

Two Viva Voce examinations will offer the candidate an opportunity to demonstrate their knowledge and practical skills gained in a more open and less formalised arena. The first of these will be held once the candidate has completed four of the modules and the second will be held upon completion of the remaining four modules. Each of the Viva Voce examinations will only cover the area studied in the modules completed.

The standards expected are laid out and explained in the 'Marking Criteria for Integrated Modules'. The IAS Diploma of Anatomical Technology and Science will be awarded to candidates who successfully complete the required standard in all 8 modules and both Viva Voce examination.

Submission of each module for assessment should be accompanied with a 'Unit Submission Form'. Two word-processed copies written in English must be included, one to be retained by the Institute and one to be returned to the candidate after assessment with any comments from the assessors.

Advanced Diploma

To complete an Advanced Diploma in Anatomical Technology and Science, the candidate must choose four *additional* modules from the remaining seven modules not chosen for the Diploma and complete the following for each of the 4 modules:

A 3000 word article for the IAS Journal

or

A 30 minute presentation on the subject to be presented at an IAS meeting

and

A Viva Voce examination to be carried out upon completion of the final module

NB All copies of work submitted and retained by the IAS will be the property of the Institute and will be made available to members upon request. Authors must seek the Institutes permission should they wish to reproduce their work for publication (other than in the Institute's Newsletter and Journal).

Components Required

The following components are required for completion of the Diploma in Anatomical Technology and Science and associated Accreditation Points available:

Diploma of Anatomical Technology and Science:

	Number to be completed	Accreditation Points available
Integrated Theory and Practical Module Write up	8	50 points per module (400 in total)
Viva Voce Examination	2	50 points per Viva Voce (100 in total)

A **maximum of 500 IAS Accreditation Points** are available for the completed Diploma.

Advanced Diploma of Anatomical Technology and Science:

	Number of write ups to be completed	Accreditation Points available
Integrated Theory and Practical Module Write up	8	50 points per module (400 in total)
Viva Voce Examination	2	50 points per Viva Voce (100 in total)

in addition to:

	Number of write ups to be completed	Accreditation Points available
Integrated Theory and Practical Module Write up	4 Completed as either: 3000 word IAS Journal Article or 30 minute talk to be presented at an IAS meeting	50 points per module (200 in total)
Viva Voce Examination	1	50 points per Viva Voce

A **further 250 IAS Accreditation Points** are available for the completed Advanced Diploma.

Integrated Modules

There are 15 integrated modules, eight of which must be studied to complete the Diploma. The modules are listed below:

Module 1	Preservation of cadavers/specimens
Module 2	Producing a specimen using Dissection/Prosection techniques
Module 3	Museum techniques - Pot construction and wet/dry mounting of specimens
Module 4	Museum techniques – Osteology and Preparation of Skeletal material
Module 5	Museum techniques – Injection and Impregnation Techniques
Module 6	Museum techniques – Model-making
Module 7	Museum techniques – Embedding, Casting, Coating
Module 8	AVA – Production (filming and editing) a Digital Format for streaming online/writing to a DVD <u>or</u> Production of a Computer Aided Learning tutorial or quiz
Module 9	AVA - Photography, Poster-making and Teaching displays
Module 10	Histology - Preparation and production of histological specimens
Module 11	Administration and Management of a Teaching/Research Unit
Module 12	Health, Safety and Hygiene in the Laboratory
Module 13	Specific Workplace Legislation including, but not limited to: Human Tissue Act 2004, Animals (Scientific procedures act) 1986, C.O.S.H.H., Data Protection Act
Module 14	Knowledge of Anatomy and related sciences - Pathology, Physiology etc
Module 15	Job-related speciality

For each write-up candidates are expected to fully research the subject area and to be able to critically analyse it thoroughly. In addition, they are required to complete a practical project associated with their chosen module. Candidates should aim to spend 10 hours or more completing this practical project. This can either be carried out in the candidates' workplace or by attending an IAS-approved workshop. Candidates must then produce a word-processed document of 2000-3000 words, discussing, analyzing and evaluating the theoretical components of the module as well as demonstrating the practical work that was undertaken by the candidate for the particular module. Each write-up should include or be accompanied by a brief laboratory log book of events as well as a discussion of the materials and methods used.

Completed module write-ups may be submitted in any order and must be accompanied by a 'Module Submission Form'.

Each module must be passed at Grade C or higher (see 'Marking Criteria for Integrated Module Write-ups').

Viva Voce (Oral) Examination

Candidates will be given a Viva Voce examination, in English, in their place of employment or at a location provided by the Institute, on completion of the first four modules, and again upon completion of the final four modules, after which the Diploma of Anatomical Technology and Science Certificate will be awarded. If the candidate wishes to complete the Advanced Diploma, a third Viva Voce examination will be carried out once the final four modules have been finished.

The purpose of the Viva Voce is to allow the candidate to demonstrate their understanding of the subjects studied as fully as possible. The examiners may ask any question concerning both the theoretical and practical elements of the modules submitted and/or any implications arising from them.

Candidates should expect the Viva Voce to be conducted in a friendly manner and not in an aggressive or intimidating tone. The duration of each examination will be approximately one hour. Example questions are listed below:

- Summarise the methods used in completing the module.
- How would you improve what you have done if you were to start again?
- What alternate methods could you have used to achieve the same result?
- What safety precautions did you adhere to and why?

All Practical Unit work completed either at IAS Workshops or at your workplace, must be available to the assessors at the time of the examination.

The Viva Voce examination will be undertaken by at least two IAS appointed assessors with suitable experience and knowledge. Dates and times will be arranged to suit the candidate and the visiting panel. Notification of the identity of the examiners will be communicated to the candidate prior to the visit, along with dates and times.

In addition to the registration fee of £50, an examination fee of £150 will be charged for each of the Viva Voce examinations. **The Viva Voce examination associated with the Advanced Diploma will be conducted free of charge.**

Each Viva Voce examination must be passed at Grade C or higher (see 'Marking Criteria for Viva Voce Examinations').

Marking and Award of Accreditation Points

Integrated Modules

On submission of completed module write-ups should be accompanied by a 'Module Submission Form' and be forwarded to the IAS Education Officer for assessment.

Module write-ups will be marked according to the criteria set out in the 'Marking Criteria for Integrated Modules'. There is a range of Accreditation Points available for each grade depending on how well the module write-ups meet the criteria within that grade band. The grade awarded, Accreditation Points earned and feedback on the write-up will be given to the candidate at the earliest opportunity following the marking of a module.

To pass the module, candidates must gain a Grade C or higher. Candidates not gaining the required pass mark of Grade C or higher will be given the opportunity to re-submit the module.

On re-submission, a Grade C and Accreditation Points (within the Grade C band) may be awarded and will count towards the Diploma.

There is a maximum of 50 IAS Accreditation Points available for each module.

Marking Criteria for Integrated Module Write-ups:

Excellent	A Grade 41-50 Accreditation Points	Thorough knowledge of subject is demonstrated Evidence of research and reading into the subject Excellent standard of writing/presentation All core topics have been very well addressed Very clear evidence of the subject skills acquired is demonstrated in the write-up and practical submission
Good	B Grade 31-40 Accreditation Points	Demonstrates a sound knowledge of the topics Good standard of writing/presentation, researched well Most core topics have been very well addressed, although some are weak Good evidence of the subject skills acquired is demonstrated
Satisfactory	C Grade 21-30 Accreditation Points	Reasonable knowledge and understanding of the subject are evident Clear presentation and expression All core topics have been addressed satisfactorily Demonstrates reasonable understanding of the skills acquired.
Poor	D Grade	Limited evidence of reading into the subject. Poor standard of writing/presentation Limited evidence of subject skills acquired is demonstrated

Viva Voce Examination

On passing the first four module write-ups the candidate should contact the IAS Education Officer to arrange for a *Viva Voce* examination to be conducted at their place of employment or to arrange a location provided by the Institute. For candidates outside the United Kingdom special arrangements for travel will be made nearer the time and a location for the examination may be provided by the Institute.

The *Viva Voce* examination will be assessed according to the '*Marking Criteria for Viva Voce examinations*'. The grade awarded, Accreditation Points earned and feedback on the candidate's performance in the *Viva Voce* examination will be given on the day of the examination.

Each *Viva Voce* examination must be passed at Grade C or higher. Candidates not gaining the required pass mark of Grade C or higher will be given the opportunity to re-take the viva at a later date. On re-take, a Grade C and Accreditation Points (within the Grade C band) may be awarded and will count towards the Diploma.

There is a maximum of 50 IAS Accreditation Points available for each *Viva Voce* Examination.

Marking Criteria for Viva Voce Examinations:

Excellent	A Grade 41-50 Accreditation Points	Thorough knowledge of subject and procedures used is demonstrated Good evidence of reading into the subject Able to communicate clearly the skills and underlying theory of the subject areas to a very high standard
Good	B Grade 31-40 Accreditation Points	Demonstrates a sound knowledge of the topics. Some evidence of reading into the subject Able to communicate clearly the skills and underlying theory of the subject areas
Satisfactory	C Grade 21-30 Accreditation Points	Reasonable knowledge and understanding of the subject areas are evident Can be lead to correct answers by a series of questions. Able to communicate clearly
Poor	D Grade	Incomplete grasp of subject and procedures used Able to recognise but unable to correct own errors in answers Unable to describe procedures used

Module Marking/Assessment

Each module is independently assessed by at least two examiners of the IAS Education Committee with suitable experience and knowledge in the areas of the modules being examined. After assessment, a copy of the work submitted will be returned to the candidate with the examiners' feedback/comments and grade. One copy will be retained by the Institute.

Plagiarism

Plagiarism is a serious issue, and a conviction of such an offence in court, carries a heavy fine. The essential element of plagiarism is putting forward the work of another as one's own. However there is no reason why you should not quote others directly, as long as this is made clear to the reader (usually by "enclosing in quotation marks" and referencing the source).

If plagiarism is found in any work submitted to the Institute, e.g. copying whole paragraphs from text-books, downloading from the Internet, etc the write-up will be returned to the candidate immediately as a fail mark Grade D. A copy of the candidate's work will be held by the Institute and re-submission will be accepted at a later date as long as substantial changes and originality are evident.

Course Requirements

Resources and Facilities

Place of Employment:

The ethos of this programme is that the majority of the course work will be undertaken in the candidate's own place of employment. This necessitates having sufficient resources and facilities available to complete the practical work associated with chosen modules.

If the facilities or resources are not available at the candidate's place of employment then the candidate can complete the necessary practical element of the module at an IAS-approved workshop or at a suitable location with the required resources and facilities to the agreement of the IAS Education Committee.

Computer Facilities:

All module write-ups must be word-processed therefore the candidate requires access to a computer with word-processing and printing facilities. Access to the internet for online searches of relevant information and texts would also be beneficial.

Libraries:

To successfully complete the integrated modules, candidates will require a library facility to be available to them. Background reading and research is essential and write-ups will be expected to be fully referenced.

Supervisors/Mentors

It is a requirement of the course that candidates select a supervisor. Ideally this would be someone at the candidate's place of work such as a line-manager/supervisor etc, but it can be any IAS-approved person who can offer support and guidance throughout the duration of the Diploma. Supervisors will be required to sign the *Unit Submission Form* to verify that candidates have completed the work stated.

Mentors are not a requirement of the course but candidates may find it useful to seek advice or guidance from a person in a relevant/related field outside their place of employment. A Directory of Expertise is available on the IAS website (<http://www.anatomical-sciences.org.uk>).

Any questions concerning general course requirements or more specific module details should be addressed to the IAS Education Officer or any IAS Council member.