

Best practice for industrial placements

as part of an accredited
degree programme



Introduction

This guide is intended for university industrial placement coordinators and professional service departments at universities. It provides guidance on best practice in industrial placements for degree programmes in the chemical sciences based on our reviews of applications for accreditation.

Additional guidance can be found in the UK Quality Code for Higher Education on the [Quality Assurance Agency for Higher Education \(QAA\) website](#).

Benefits of industrial placements

Industrial placements are a great way for universities and their students to connect and network with employers. Placements have many benefits for students, universities and employers. These include:

- real world graduate career experience, to enhance CV and increase employability
- improving a university's employment outcomes
- improving HE students' employability and other skills to match those identified by the chemical industry
- insight into careers available, particularly in the chemical sciences, to increase likelihood of choosing a career relevant to their degree
- could lead to full time employment opportunities
- improved skillset, both technical and transferable, and increased motivation on return to university that adds context to undergraduate degree
- improved understanding between industry and universities, supporting collaboration
- helping students qualify for competency based professional recognition such as Registered Scientist (RSci) and Registered Science Technician (RSciTech)

Type of Placement

There are various types of industrial placement:

- integrated year: these replace a year of study at the institution, include distance learning, are assessed and count towards the final degree and are chemistry related.
- sandwich year: these are intercalated or additional years do not necessarily contain distance learning and do not count towards the final degree classification.
- short term internships during summer break, these are not usually assessed and do not have associated distance learning.

Type of work

The accreditation of placement-bearing degree programmes allows flexibility in the type of placement a student undertakes, providing it is set and assessed at the relevant level (either Bachelor's or Master's level). A wide range of chemistry-using employers, from large companies to small and medium-sized enterprises (SMEs), will be able to provide suitable placements. The placement does not need to be laboratory based, placements in chemistry communication or pedagogy, for example, are acceptable for accreditation. Some examples of the type of placement structure include:

- a single research project
- a series of 2–3 smaller projects
- a combination of a research-related or similar project
- a technical role which is at graduate level and has a clear job description
- analytical work from which a project is derived
- and other work carried out by graduate chemists

The Royal Society of Chemistry's criteria for accreditation of degree courses that contain a placement are that they need to be carefully assessed on the basis of their content as well as the professional skills that a student will develop through the placement. A well-organised placement will clearly define the objectives at the beginning. It will also detail the key skills that students will develop. The student should have a line manager, and this should ideally be the same person for the duration of the placement. The department should have up-to-date information on who line manages the student and provide clear guidance to both the manager and the student on how the placement will be assessed (if appropriate).

The department should decide the weighting of the project in the degree course and how students will feedback about their placement as well as how their performance should be reviewed by their placement supervisor. These details should be well defined from the start and be appropriate for the level of the placement.

Costs and employment status

Employers incur significant direct and indirect costs in hosting students on placements. However, most science and technology-based industries in the UK have an established culture of paying students on placement and other work experience, and this is certainly the expectation for most industrial placements in chemistry.

A placement student is an employee with a contract and certain benefits and so remunerating the student is strongly recommended. Not doing so carries reputational risk for companies when it comes to future staff recruitment. Placements give employers a valuable chance to assess the competency of students which could lead to future employment for the student.

Schedules and planning

Most university chemistry departments will have a designated industrial placement coordinator who may be assisted by other staff (including non-academic support staff). Where (as in most cases) the placements are year-long and run contemporaneously with the academic year, the coordinators (or their teams) will generally start their placement processes at the beginning of the academic year which precedes the placement year – i.e. September or October in the year prior to a July/August placement start. Some start even earlier. At this time, the coordinator, or their team, may liaise with potential host companies to confirm likely opportunities, collate knowledge to pass on to students and approve placement opportunities. There is no fixed timetable which employers have to follow.

Many departments aim to have most placements offered and agreed by Easter, although many more are formalised during the summer term. The earlier that employers publicise upcoming vacancies the better. Employers that announce placement opportunities early allow placement coordinators plenty of time to consider and 'approve' their placements and promote them to their students. Some employers that announce their placement schemes early may subsequently make some adjustment to numbers or offers

due to changing business requirements. Particularly for smaller companies, planning this far in advance may simply be impossible. In reality universities have to be flexible and will accommodate employers who offer their placement opportunities somewhat later. The department coordinator, or their team, should endeavour to keep employers informed about likely student numbers throughout the process and similarly employers should keep universities up to date on the number of placements available.

HE funding rules require a placement to be full-time for at least the length of a university year. In reality many are 36 weeks and some as long as 44 weeks. The length of placement is decided by the employer, but departments should build a relationship with the employers to be able to ensure that the length of the placement is suitable for both the company and the student.

Approving industrial placements

University placement coordinators need to approve the placements that their students undertake to ensure that the type of work and environment are suitable. If the placement is an integrated year, it would be expected the work would be relevant to chemistry departments should ensure that the placement encompasses the right type of work, working environment and placement supervision. It should also be at the correct level.

For example, at Master's level there should be an element of project work involved. Placement coordinators, or their teams, should have a relationship with companies such that they actively help companies to facilitate this approval, particularly for small and medium sized enterprises. This has benefits to the employer because the coordinators, or their teams, will then promote approved vacancies and support their students in applying to the most relevant vacancies.

Finding vacancies

Students should be supported either by the department or the careers service in finding and applying for placements. They should be guided in CV production and given the opportunity for practice interviews.

There are several ways that students can find placements. Some common methods are:

- university placement coordinators, or their teams, liaise with potential hosts and pass knowledge of placements directly onto students
- careers focussed events such as careers fairs
- vacancies advertised with clear job descriptions on a company's own website
- vacancies advertised with clear job descriptions on a university's website
- the [RSC's free placement vacancy service](#) on its ChemistryWorldJobs website
- a number of other websites and employment agencies where placement vacancies can be listed
- students find placements themselves: this could be through existing relationships and contacts, or through contacting companies they identify themselves, and the university may train students how to do this

Applications and recruitment

Students should have the opportunity to discuss which vacancies they should apply for, and their applications should be supported by the student's placement coordinator, or their team. Careers advice, CV and cover letter writing course, mock interviews and other support should be available to the students, whether from the department or the university careers service.

Some departments may choose to run specific awareness and training sessions for

students, for example discussing how to find placements and bringing in students who have returned from placements to discuss their experiences and offer peer support.

The application process can start any time after placements are announced. Students will be company employees and should expect conventional recruitment practices to apply. The student will benefit from going through a formal application process.

The partnership between employer, university and student

Placements are successful when chemistry departments and placement companies have successful partnerships. This is likely to develop if all three parties understand expectations, their respective responsibilities and build a trusting relationship. Regular and appropriate communication between the department and company with a freedom to ask questions is key to achieving this. Normally there will be at least one visit by the university academic tutor to the employer during the placement, with e-mail or virtual channels available to the student if there is an issue. There are also certain materials that may be needed to ensure a successful placement:

- The student should know what is expected of them during the placement. This should be covered in a handbook or checklist which includes:
 - understanding specific objectives
 - understanding the roles of their supervisor and/or line manager, and whom to ask for advice if they are not available
 - understanding work and activity boundaries and responsibilities with the supervisor
 - understanding how performance will be assessed

- being clear on issues such as working hours and any expectation of working overtime
- familiarisation with Good Laboratory Practice (GLP) and Control of Substance Hazardous to Health (COSHH) regulations and other standard operating procedures where appropriate
- being open and frank about mistakes
- An agreed statement of expectations provided to the employer which lays out the responsibilities and expectations of all three parties including health and safety and the student's safe working practice, and the amount of distance learning the student can expect.
- An understanding of what happens in unforeseen circumstances which mean the placement cannot be completed.
- A standard employment contract from the employer, specifying the terms and conditions of employment and other benefits, potentially including a right to some induction and relevant training. This will also be the opportunity to outline procedures in the case of violation of company rules.
- A Non-Disclosure Agreement (NDA) or similar contractual agreement covering the non-disclosure of information the company wishes to protect such as intellectual property (IP).

Management, supervision and training

A successful placement experience, for both employer and student, requires good quality supervision and support from the employer. As for any employee, the company will need to assign a supervisor or line manager who directs and takes responsibility for the work of the student on placement and also their safety

and wellbeing. Supervision and support of a student on placement gives staff opportunities to line manage and develop professionally and should not be a burden if approached in the right way.

University support and student well-being during the placement

Departments maintain certain responsibilities during a placement. They should assign an 'academic tutor' to the student who will be responsible for providing some pastoral care for the student while on placement and provide a point of contact between the student and the university services. Some departments may encourage formation of a virtual group of placement students to create a cohort feel. Universities should communicate with employers so that they understand the role of the academic tutor. Understanding this and the extent of communication expected tends to reassure employers that this aspect of a placement is not arduous for the company.

We would normally expect the academic tutor to:

- provide a clear point of contact
- have oversight of the general progress and wellbeing of the student
- arrange aspects of the assessment required for the placement (such as including visiting the student at the employer)

A typical academic tutor's visit to the company might include:

- a short presentation by the student to the academic tutor and the supervisor
- a private meeting between the academic tutor and the student
- a private meeting between the academic tutor and the supervisor
- discussion of health and safety issues
- a short tour of the working environment

Based on the visit, the academic tutor will complete an assessment form. Providing this to the employer ahead of the visit will help them to understand the nature and level of the tutor's potential interest and the information they will seek.





Students' distance learning

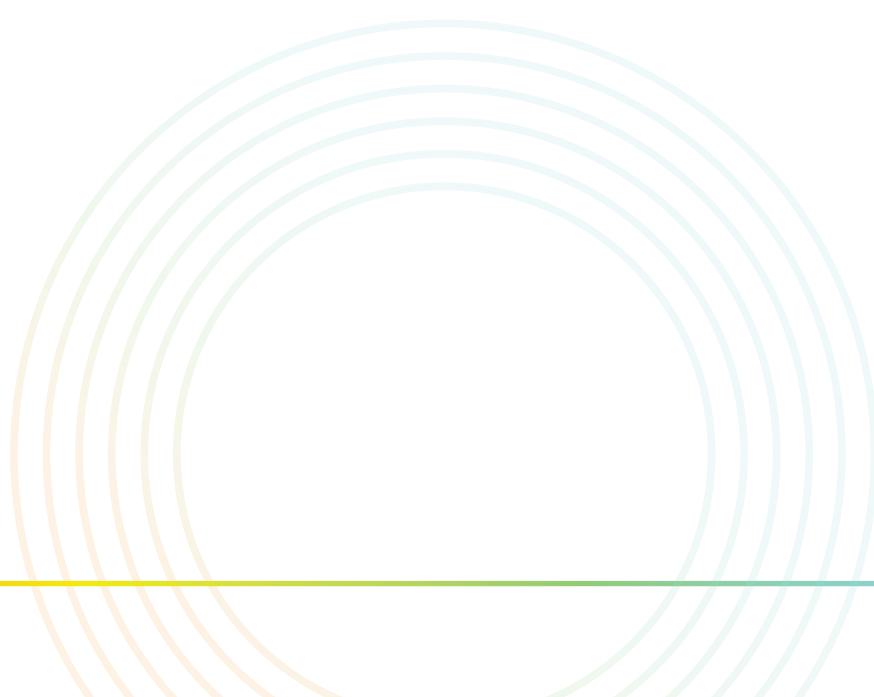
Some academic work may need to be undertaken by the placement student through distance learning during the placement year, particularly for integrated year type placements. Accreditation requires this to be no more than 25% of the year. Departments should consider the balance of a student having an excessive workload but being well enough prepared to enter their final year. It may be helpful for students to have knowledge of when distance learning assignments will be set in advance to help them with planning.

The department may wish to consider ensuring the assessments are well spread across the duration of the placement wherever possible. Neither students nor universities should expect the employer to provide time off to accomplish academic assignments. Departments should acknowledge this when deciding number of assignments which have to be delivered. The content and amount of additional work required of the student should be manageable outside of their working hours. At the end of their placements, students would normally be required to produce a report.

Employer reporting requirements

The employer will need to report on the student's progress and their placement experience. The supervisor may be responsible for providing an assessment of the student at the end of the placement. This should be a fair representation of the student's performance while on placement and would normally count towards the assessment for placements. At a minimum the supervisor should provide a pass/fail recommendation.

The university will need to provide the line manager with an assessment form which they can use for the assessment procedure. It is good practice for departments to provide employers with the assessment forms from the outset and also provide some guidance on good assessment. This should not be a big burden on employers and a typical assessment form is included on the following page for reference.



Intellectual property

Chemistry departments should be sensitive to employers' needs in relation to intellectual property (IP). Universities should aim to accommodate the employer's needs and extend considerable flexibility in the university's assessment processes to accommodate and protect companies' IP interests. However, all

requirements to do this should be agreed in advance. If required, the student and academic tutor must sign a non-disclosure (NDA) or similar IP protection agreement at the outset of the placement. It is also critical that attention to IP is highlighted in the initial training for the student.

Disabled students

Universities and other education providers have to follow the [Equality Act of 2010](#) to ensure that disabled students have access to placement opportunities. The [good practice guidance](#) on work placements for disabled students is available to read.



Example industrial placement content and assessment form

The content of industrial placements must be well defined from the start. The employer should outline what skills the student will develop through the placement. There are three main areas that should be covered in a placement: soft skills, practical skills and non-lab-based skills.

These skills and objectives should be communicated clearly in writing before the placement starts. They can however be changed during the placement if necessary, subject to approval from the employer, department and placement student. The same document may also be used at the end of the placement to assess a student's performance.

Each university is responsible for deciding on and implementing their own process. The following form is an example of how the content of placements can be outlined by employers before the start of the placement. This form also includes a section for reviewing the student at the end of the placement by a qualitative review. Industrial placement supervisors often prefer to qualitatively review a student's performance rather than quantitatively grade them. We have provided specific examples for each skill area however please note this is only intended as a guide: the skills developed in each of the three areas will vary from placement to placement.

Skill group (every placement should develop skills in these three skill sets)	Objectives/goals (the employer should detail what skills the student will develop during the placement in this section)	Evidence of competency during placement (to be completed at the end of the placement by the student's supervisor)
Professional skills	e.g. develop good communication skills by giving clear oral presentations etc.	e.g. presented the results of their research to colleagues internally at the end of the placement etc.
Practical skills	e.g. develop the ability to write up experiments to an industry standard including a full COSHH assessment etc.	e.g. completed a number of detailed write-ups of scientific experiments etc.
Non-lab based skills	e.g. develop knowledge of the chemical sciences outside of their defined projects etc.	e.g. went out of their way to ask colleagues about their areas of work and learn what they do etc.

Helpful links

Find industrial placements and internships on [Chemistry World's free vacancy placement service](#). Listings are uploaded for up to a maximum of 30 days. Sign up to alerts to be notified when new listings are added.

Discover inspirational chemistry career paths and useful resources on how to get there with [A Future in Chemistry](#):

- Explore [100+ job profiles](#) of real-life chemists making a difference to the planet
- Browse [our employers map of UK](#) and Ireland to find local companies and science parks who employ chemists
- Use [our guide for work experience and placements](#) to support your search



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