

Industrial Skills and Knowledge Expectations of Graduate Employees (example 2)

[TUTOR'S NOTES.

The text following shows an example of an appraisal process against which the graduate employee is measured during the first years of their employment as a bioscientist in a large company. It is aligned to the job description for the post and to the interview process through which the employee was appointed. Appraisal would take place each year and would be both developmental (to identify areas where training could improve or extend performance) and judgemental (as bonus and career progression are linked to the appraisal process).

Initially the appraisal process would proceed from the descriptors set out below which are generic to bioscientists entering the company. In following years, more detailed items, specific to the actual job and the current work in progress, would be added to and built on the descriptors below and achievement of these more specific targets would also be monitored.

The performance appraisal would start with the preparation of a self-appraisal papers, followed by the appraisal itself and finally by feedback and the setting of further targets. The self appraisal paper would have the following headings:

- Particular/individual objectives - the generic descriptors or items set at the last appraisal or modified during the appraisal period. Should include objectives which would aim to stretch the individual in each of the areas and in addition would develop their creativity.*
- Relative importance - prioritize the objectives and allocate time spent on each, depending on importance to the overall objectives of the laboratory, unit or company.*
- Behaviours/skills needed to achieve these - what particular skills/knowledge do you need to deliver these objectives. Do you have these assets? Do you need support to develop any of these behaviours or skills?*
- Performance measure for success - did things go well and how did you measure this?*
- Development actions - support needed to achieve any of the above objectives?*

USE BY TUTORS AND STUDENTS

*This document can be used in several ways either as it stands or after **editing by tutors** to provide local emphasis appropriate to individual course or to bring to the fore the **priorities of the main employers who employ your graduates**. Alternatively, tutors might wish to obtain details of scheme actually in use by those who employ their graduates.*

- 1. Tutors and their course teams may wish to consider to what extent their course enables graduates to score highly in the appraisal outlined and then to see how the course might be modified to improve the outcome.*
- 2. Tutors might wish to present to students the appraisal process so students can see how the process works as well as the particular knowledge, skills and attributes valued by employers. This can be done in a whole class context as a presentation.*
- 3. Tutors might wish to present the appraisal process to students in small groups and to encourage them to discuss the meaning of each item, to reflect on the extent to which the student believes they would score highly and to identify the parts of the course which deal with each item.*

4. *Students can be provided with the document formed as an achievement matrix in their course handout material or progress files. They can be asked to fill in where on the course each item is dealt with and to reflect on the extent to which they would score highly on the different items.*
5. *Students can be grouped in pairs and asked to act one as appraisee and the other as appraiser (and then swap over) to carry out the appraisal process. This would need to be preceded by some discussion on and training in appraisal.*
6. *It is possible to use a tutorial session for the student tutorial group to use the appraisal papers to collectively appraise the TUTOR. This again needs to be preceded by some training in appraisal generally but is good preparation for (5) above.*

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There are 7 areas each of which is broken down into a set of descriptors. The areas are:

- 1. Scientific Knowledge and Skills;**
- 2. Business Knowledge;**
- 3. People Management abilities;**
- 4. Problem Solving abilities;**
- 5. Communication abilities;**
- 6. Impact on Business or Department Objectives;**
- 7. Key behavioural competencies.**

The set of descriptors for each area is given below. Over a period of three years from graduate entry it would be expected that the individual would develop skills in a significant number of categories under each heading.

1. Scientific Knowledge and Skills:

- Has a thorough understanding of the biological principles and concepts associated with own subject area and an appreciation of the biology in other specialisms closely related to work areas.
- Has an understanding of the literature in the area of involvement and an appreciation of the relevant science. Is proficient in retrieval and analysis of relevant literature.
- Has understanding of and ability to perform a range of laboratory procedures and mastery of operation of a range of laboratory equipment.
- Has understanding of appropriate data handling packages and databases and has expertise in analysis and interpretation of data.
- Can devise, validate, develop and implement, within areas defined by the supervisor, activities and processes related to the work area, based on the review of literature and on experience.
- Uses a high degree of practical skill in order to carry out experiments in support of a specific research area.
- Is able, when appropriate, to set standards for relevant technical procedures.
- Has a good knowledge of Safety and Health Procedures and applies these in all circumstances. Has mastery of safe working practices.
- Is aware of personnel policies and procedures.

2. Business Knowledge:

- Has appreciation of Team objectives and relevant time scales.
- Understands the objectives of the laboratory and important deadlines that the Team have contracted to meet.

- Has an understanding of how own work within the team interacts with others within related areas and will know how they impact on the objectives of the laboratory, project team and overall business.
- Has an awareness of research and competitive activity developments within the industry, typically through reading relevant literature.

3. People Management:

- Is capable of prioritising and organising own workload and that of 1-2 Associate Scientists.
- Can collaborate with others to devise, validate, develop and implement, within areas defined by the supervisor, activities and processes related to the work area.
- Works under general guidance of a more senior scientist, although is able to take a largely independent role.
- Is an effective and collaborative team member, and assists in the technical training of more junior staff, using existing knowledge and experience to offer advice and guidance.
- Can understand the need for ongoing change and assist others in handling associated uncertainty.

4. Problem Solving:

- Has good problem-solving skills in order to structure own experiments, and analyse, interpret and report experimental data to supervisor.
 - Acts as a trouble-shooter and may provide advice and guidance to others using knowledge and experience.
 - Will, where necessary, design solutions, e.g., experiments to solve problems, maintaining and monitoring quality throughout.
 - Shows proficiency in design and execution of novel experiments
- Will deal independently with most situations, but will take advice available in handling complex cases or in making more sensitive judgements/decisions.

5. Communication:

- Has excellent communication skills in order to regularly exchange complex information regarding the progress of experiments to other scientists, management and project team members.
- Will make and communicate reasonable recommendations based on own and other's findings.
- Will be proactive in responding to other's requirements, seeking information from other science areas as required.
- Has good written communication skills and can maintain accurate, up-to-date records and write coherent and concise reports on experiments.
- Have good verbal communication skills and the ability to present and defend a case.
- Is proficient in using tools which facilitate communication.
- Develops, maintains and effectively uses own networks.
- Can prepare and present, on time, results in reports to update Management and Project Team members on progress.

6. Impact on Business Results:

- Will have a direct impact on one main work area.
 - Has some impact on the efficient running of the laboratory, effectively carrying out experiments in specific project areas, and developing modifications to improve quality and productivity.
- Impact on the wider business will be through the provision of information, working towards products of value to the business or making improvements to processes.

7. Key Behavioural Competencies

- Innovativeness -- bringing thoughts, processes and ideas from outside the traditional area of investigation. Being able to think outside the box and see connections and parallels with associated areas.
- Analytical thinking -- logically breaking problems down into their essential elements, carrying out a diagnosis and developing a solution.
- Tenacity -- being prepared to continue to develop and trial solutions even in the face of failure; putting in the effort required to progress a successful outcome.
- Initiative -- being proactive, seizing opportunities spotting openings and avenues for progression
- Self development -- in each area of work, identifies, makes plans for, takes action and reviews progress in improving personal skills and competencies.