

## **Initial Professional Development (IPD) - A Guide for Graduates seeking registration**

What is IPD?

IPD stands for Initial Professional Development and is the term that describes how a recently graduated marine engineer, marine scientist or marine technologist gains their professional competence in the workplace. The aim of IPD is to provide a structured scheme designed to develop the intellectual and practical skills they will need in order to work safely and effectively in their intended occupational environment, using the techniques and resources appropriate to the level and type of occupation and covering its regulatory, business management and social environment. This professional 'competence' is acquired through an agenda of training and working in a position of responsibility. The graduate trainee will be assisted through this period by colleagues, peers, mentors and the Institute.

IPD is structured so that the graduate trainee will know where they are within the IPD programme. As well as undergoing the training and taking on more responsibility, the graduate trainee will need to plan their IPD and monitor their progress. Achievements will be recorded and assessed and trainees will be expected to reflect upon the corresponding 'competencies' gained. IPD is the 'vehicle' to the Professional Review.

**The primary outcome of the formation process (IPD) for those seeking registration is the development of competence, and the commitment to maintain this competence.**

The achievement of an academic qualification that satisfies the educational base for registration on one of the Institute's registers (Refer to the IMAR EST Definitive List of Registers - [www.imarest.org](http://www.imarest.org)) is but the first step on a career of lifelong development. Just as an individual's academic base is developed in a series of stages to expand both breadth and depth of knowledge and understanding of engineering/scientific/technological principles, so professional development towards registration is designed to provide a structured and co-ordinated development programme, integrating this knowledge and understanding with the practical applications of the chosen discipline.

Initial Professional Development (IPD) includes aspects of engineering, science and technology, business, management and leadership, and broadly based personal development. Where appropriate it may also include additional job-

related, non-technical requirements, such as modern foreign languages and training and development skills. It adds to the learning achieved within the education base, addressing specialist applications, extending breadth and depth of knowledge and skills and meeting specific employment and business needs. IPD should provide a balance between preparation for an immediate job-specific role and contribution to breadth of development for the future.

IPD may cover a range of options from that of a student ‘sandwich’ placement, research assistant, long or short-term employment or self-employment. The essence of IPD is the development of **competence** and **commitment**.

Building on their initial professional development prior to registration, individual engineers, scientists, technologists are expected to manage their continuing professional development (CPD) throughout working life post registration. They take appropriate action to update and enhance those competencies relevant to their job and career interests and anticipate future requirements. Evidence of CPD provides a demonstration of continued commitment to professional competence and is a pre-requisite for transfer to higher categories of IMarEST membership.

### **Competence and Commitment**

**Competence** and **Commitment** are key to preparation for Professional Review. Competence to perform professional work to the necessary standard, and commitment to maintain that competence, work within professional codes and to participate actively within the profession. Competence includes the knowledge, understanding and skills which underpin performance. Engineers, scientists and technologists become competent through a mixture of education and professional development, traditionally known as the *formation process*. Competence and commitment are defined in more detail in the following table:

Competence	A	Knowledge and Understanding
	B	Application to Practice
	C	Management and Leadership
	D	Interpersonal Skills
Commitment	E	Professional Conduct

More detailed competence and commitment outcome statements are explained, for each category of registration, in the relevant standards document (Refer to the IMarEST Definitive List of Registers - [www.imarest.org](http://www.imarest.org)). Accreditation panel members should use these statements when mapping the skills offered in a company’s IPD programme to the competence and commitment requirements for membership and registration.

Competence of an individual includes the broad knowledge, understanding, experience and skills appropriate to the level of registration. It requires a detailed understanding of the principles and the mastery of the knowledge and analytical skills required for specialists in marine engineering, marine science and marine technology and the ability to perform the technical roles fully and well.

Supervisory, management and personal skills are required to be effective in both expected and unforeseen situations.

*Individuals are also expected to demonstrate a commitment to maintain their competence to practise in their chosen area of work as legislation, roles, technology and employment structures change. They are also expected to apply the Code and Rules of Conduct to their work including the Codes of Practice relating to risk and environmental and ethical issues. Participation in the broader profession, industry and society, particularly through support to new or prospective entrants to the profession is a key feature of the professional engineer's commitment.*

### **Initial Professional Development - Requirements**

The aim of IPD is to provide a structured programme of training and experiential learning designed to develop the intellectual and practical skills individuals need to work safely and effectively in their intended occupational environment, using the techniques and resources appropriate to the level and type of occupation and covering its regulatory, business management and social environment.

- i. Basic training should include a short company induction course, during which individuals are made aware of the function of the company within the industry, company procedures and their role and the roles of other employees within the company structure. They should be encouraged to develop oral, written and graphic communication skills and safe working practices.
- ii. During the second period of professional development individuals move through the various departments of the company becoming familiar with the areas of activity covered and the work of colleagues, problems encountered and the need to develop sound working relationships. At this stage individuals should begin developing their own particular interests, gain awareness of cost control and marketing practices, and become involved in planning, production, testing, commissioning, operation and maintenance as appropriate.
- iii. The third component involves the development of the individual's expertise and competence. More responsible work activities are undertaken and individuals are encouraged to apply a combination of their theoretical knowledge and understanding with the skills obtained during their earlier professional development to organise their own work and ensure that it is carried out efficiently.

IPD will be confirmed as complete when individuals are considered able to combine their theoretical knowledge with their understanding of procedure and practices through the accomplishment of specific tasks. This may take some individuals less time than others.

The time taken to complete IPD may vary depending upon the individual's capabilities and the type of work carried out by the employer. As they move through their respective IPD programmes individuals will become increasingly

adept at carrying out various tasks related to their discipline and will be required to demonstrate and be accountable for their technical competence

It is unlikely that the required competence and commitment for Chartered level registration and Incorporated/Registered level registration will normally be achieved in less than four years and for Technician level registration, normally a period of about three years. The emphasis should be on the development of a broad range of competences in the intended job role.

Programmes of IPD are likely to include:

- a. **Development Action Plan.** This should be based on an analysis of the knowledge, skills and attitudes required to demonstrate performance in the work place at the requisite category of membership.
- b. **Training** to develop the intellectual and practical skills needed to work safely and effectively in the intended occupational environment, using techniques and resources appropriate to the level and type of practice and of its regulatory, business management and social environment. This may need to be underpinned by some focused educational development.
- c. **Experiential learning** intended to develop a positive approach to change and to enhance the professional competence, effective professional and business relationships and a nurturing of the professional commitment needed for registration.
- d. **Monitoring and recording** of the development of professional competence and commitment and assessment against the criteria appropriate to the particular category of registration.

### **Development Action Plan**

The Development Action Plan is intended show how individuals intend to set out and identify their long and short term career aims and the most appropriate direction they consider open to them. Defining the former is the key to a successful career development and should cover a period of such length as to set the general direction for the future career, giving an estimate of the realistic time scales, resources, and options for career development activities over the foreseeable future. The aims should be challenging, but at the same time realistic, clearly defined but flexible, stated in broad terms but without being vague, addressing both the long and short term. As a guide, the Development Action Plan may involve aims to be competent with regard to technical ability and management skills, improved standing and reputation within the chosen discipline and expansion of knowledge and competence as part of the development of overall professional skills.

Once objectives have been defined, the general direction of the individual's aims should be specific, realistic, achievable and measurable within a reasonable period of time.

During IPD individuals should be guided by three experienced senior engineers, scientists or technologists:

- **The Manager**, who should guide and support individuals through the specific requirements of job placement relating to the Development Action Plan.
- **The Supervisor** who will normally be a registered engineer, scientist or technologist, preferably a member of The Institute of Marine Engineering, Science and Technology, who will oversee day to day activities. When individuals are competent in each discrete aspect of their Development Action Plan, the Supervisor will sign the relevant portfolio entry to this effect.
- **The Mentor** will be an experienced and appropriately registered engineer, scientist or technologist perhaps not of the same discipline and preferably from another department or independent of the employer. Neither the line manager, nor a senior manager who is responsible for the individual, should be the Mentor. The duty of the Mentor is to guide individuals by friendly advice through their training and experience by recognition and understanding of the work they are undertaking and to assist them to gain adequate breadth and depth of experience. The Mentor may also assist by consulting with the Supervisor and Manager.

The role of Manager and Supervisor will often be undertaken by one person.

### **Evidence of Competence**

The major item of evidence is a portfolio describing progress towards competence, and registration as appropriate. During the period of IPD, this portfolio should record details of the structured programme undertaken, evidence of progress through it and acknowledgement of achievement by the signature of the Supervisor.

The portfolio is the most useful means of assessing eligibility for registration. On completion of IPD candidates may submit it as evidence that the required standards have been met that the required level of competence has been achieved. The competences required for registration are detailed in the relevant standards document (Refer to the IMarEST Definitive List of Registers – [www.imarest.org](http://www.imarest.org)).

The portfolio should:-

- include the development action plan;
- identify, in a logical and concise manner, the elements of competence as they are achieved;
- provide the basis for discussion and comment on progress with the Supervisor and Mentor;
- provide a means for assessing competence;

**The portfolio is an important document and it is the individual's responsibility to ensure its safekeeping and its satisfactory completion.**

### **Documentation of Training and Experience**

Within the section of the portfolio relating to IPD, individuals are advised to comply with the following:

- Portfolios should contain reports featuring the training, experience or project work undertaken and include any observations and relevant data. Each report should be signed by the Supervisor.
- The portfolios should not be a day-to-day diary of events. It is useful to keep such a notebook for making daily notes from which the portfolio may be written up at suitable intervals. Reports and other relevant documents may be included in the portfolio.
- Sketches, drawings, calculations and photographs may be used where they amplify and add to the written material. Long calculations or computer printouts should not be included unless they are essential to the understanding of the written material.
- The portfolio should emphasize the work actually carried out and lessons learned. It is not sufficient merely to describe the general progress of the work being undertaken within the department or project.
- Portfolio reports should refer to the Development Action Plan and where ever possible, demonstrate in the entries that the objectives detailed in the Plan are being achieved.

It is recognised that individuals may not undertake the whole of their training and development with one employer. In such cases it is important that the portfolio is up to date and entries are signed by the Supervisor before moving on.

Following registration, members are expected to maintain evidence of their continuing professional development. (Refer to the IMarEST document – *Continuing Professional Development (CPD) – A Guide for Members*. This guide is available to download on the IMarEST website – [www.imarest.org](http://www.imarest.org)).

**The IMarEST IPD accreditation panel should look for evidence that a company seeking accreditation provides individuals with an approved portfolio or logbook to maintain. If the employer does not have such a programme, then The Institute can assist in the development of a suitable personal programme.**

Additional information about IPD can be obtained directly from the IMarEST website at [www.imarest.org](http://www.imarest.org) or alternatively from the Education and Training Manager at IMarEST HQ.

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