

## **Notes for guidance for CStat applicants via the competence based route**

The Society offers two routes to Chartered Statistician (CStat) status – a **standard route** and a **competence based route**.

Applicants whose qualifications meet at least one of three criteria detailed in the Annex should apply for CStat status via the standard route. If you are not sure whether your qualifications fulfil the criteria, we would advise you to first review the Society's standards within the Annex. If there are gaps in coverage of the required material, then you may still be eligible for CStat status via the competence based route if you can demonstrate that the necessary knowledge or skills have been acquired in a different way (i.e. through training or further study). The criteria for professional statistical experience are equivalent for both the standard and competence based routes.

When completing the form, applicants will be asked if they wish to apply for CStat status via the competence based route. Upon selecting "yes" for this question, the online system will automatically generate a further task where applicants can provide the additional information needed for this route.

Applications are considered by the Professional Affairs Committee and the confidential nature of the assessment process is stressed. Nevertheless, it is recognised that some applicants may need further assurance or guidance in this regard. This might for example relate to the use of an organisation's internal documents as part of an applicant's training portfolio, or if there are issues of security clearance. Applicants who anticipate problems with confidentiality should contact the RSS office for advice.

### **Criteria for professional development**

Applicants for Chartered Statistician status have to demonstrate professional development consisting of appropriate refereed professional statistical training and experience. It is acceptable for the training to be partly or wholly experiential, i.e. on-the-job.

Candidates accepted via this route will have a minimum of 5 years of professional experience in a field or fields where development and/or application of relevant statistical methods can be drawn on to demonstrate the competencies. In practice it is likely that an applicant's period of experience will be greater than 5 years, in order for them to have accumulated the necessary statistical knowledge and experience. Applicants must show that sufficient training and experience, in line with the Society's [continuing professional development policy](#), have been acquired to satisfy the Professional Affairs Committee.

In the case of PhD study, the norm is to allow this to count as one year of training/experience, on the basis that it is usually very deep but narrow. Any part-time work carried out alongside further full-time study can be considered, providing full details are provided in the application.

Full details of the professional experience and professional training requirements for Chartered Statisticians can be found below.

### **Professional experience for Chartered Statistician**

Any relevant practical professional statistical experience will be considered. The following list is indicative of types of experience but it is not exhaustive.

- Managing a statistics section
- Leading projects with a substantial amount of statistical analysis or modelling
- Undertaking statistical analysis of data and reporting on the results
- Having responsibility for the interpretation and presentation of statistical information
- Designing statistical databases and reporting systems
- Teaching statistical theory and methods, and their applications, in a practically oriented way; at undergraduate and/or postgraduate level.
- Unsupervised statistical consultancy

The experience must be refereed – see below.

### **Professional training for Chartered Statistician**

Applicants must provide details of the continuing professional development (CPD) activities in which they have been engaged. A CPD summary covering the preceding 2 years, demonstrating compliance with the [Society's CPD policy](#) must be submitted as part of the application ([a CPD summary template](#) is available from the RSS website).

Applicants should also keep appropriate documents and other supporting material, and are strongly advised to maintain a portfolio for this purpose. The contents of such a portfolio are at the applicant's discretion, but should be seen as a selection of key material. The Society does not believe that it will commonly be necessary or desirable for applicants to maintain extensive portfolios. Compact but informative portfolios are encouraged. A portfolio might contain a selection of the following items, or others, depending on the career of the applicant. The items in this list are offered as guidelines. The list is not intended to be prescriptive, nor should it be interpreted as an order of importance.

- Publications, refereed.
- Publications or presentations at conferences.
- Internal organisation reports.
- Internal presentations.
- Training material, internal or external.
- Other material in which participation of the applicant in a development activity is acknowledged.
- Extramural statistical work (this might include appropriate service on committees).

The portfolio should not be submitted as part of the application, but should be available on request; as the Professional Affairs Committee reserves the right to see it.

### **Referees**

At least two referees are required, and the references in combination must usually cover the most recent 5 years of an applicant's career. Referees must be able to comment authoritatively on the statistical aspects of the applicant's work, professional experience and any on-the-job professional training. At least one referee should be in a position of seniority (for example, the applicant's line manager).

In the majority of cases two referees is likely to be sufficient, but this depends on the career path of the applicant.

Normally, all referees should themselves be statisticians and where possible should hold CStat status. It is appreciated that some applicants will not be able to provide such referees, though

in such cases applicants should endeavour to nominate referees who hold equivalent status in other professions.

### **Additional criteria for competence based route to CStat**

For the competence based route the applicant must provide the following information:

- A completed application form as used for the standard route (this includes details of the statistical content of academic qualifications, job roles and brief descriptions, a CPD summary for the preceding 2 years, referee details, code of conduct declaration).
- Additional information as follows:
  - A summary of other formal education/training in statistics (assessed or not) typically undertaken during the period of professional work.
  - A competency report.
  - Details of a contact who can provide verification of the information provided in (i) and (ii). This should ideally be a Chartered Statistician or someone holding a similar professional accreditation in statistics (or possibly someone with an academic qualification in statistics who holds a senior position responsible for statistical work). Verification is an attestation by someone who is qualified to judge that the information provided is, to the best of their knowledge, factually correct. It is not intended as a judgement of whether it meets the standards for CStat.

The additional information is intended to show how the applicant has developed the depth and breadth of statistical knowledge during their period of professional practice; and to demonstrate the achievement of competencies expected of a Chartered Statistician.

In their competency report, applicants will be required to provide information for each of the competencies C1 to C4 described below. In brief, C1 relates to being up-to-date in statistics, C2 to dealing with the complex or unexpected, C3 dealing with developments in the area of application, and C4 with ongoing reflection and improvement.

#### **C1: Use experiential knowledge and statistical understanding to optimise the application of existing and emerging statistical methods.**

*You should provide sufficient detail here to show your experiential knowledge and how you have applied it. Further to this, include any examples of where your broad statistical understanding is applied to your area of practice. Examples could include but are not limited to:*

- *Writing and presenting internal papers and reports*
- *Conducting appropriate research to facilitate design and development of processes in your field of application*
- *Design and delivery of statistical teaching and training*
- *Developing standards and processes for statistical work*

#### **C2: Exercise sound judgement in the absence of complete information and in complex or unpredictable situations.**

*This competence is asking you to demonstrate appropriate handling of novel or unexpected situations. This will include being aware of the limit of your own knowledge and professional competence, to demonstrate an ability to manage your own strengths and weaknesses and*

to recognise the level of risk attached to your actions. Examples could include but are not limited to:

- *Application of an existing technique to a new situation*
- *Managing the interpretation of unexpected findings or events and assessing their impact*
- *Decision making in a complex situation*

### **C3: Demonstrate critical statistical evaluation of information and concepts to propose solutions to problems**

*You should think of this competence in terms of developing or selecting the best methodology. This could include study design, the subsequent data analysis, conclusions you draw and their communication; and how you overcame any barriers or issues. Examples of this critical evaluation could be in the context of:*

- *Developing experimental designs or approaches to statistical inference*
- *Survey design, implementation, analysis and interpretation of findings*
- *Ensuring the interpretation of findings is understood by the target audience (subject matter experts or lay people)*

### **C4: Take responsibility for continuous performance improvement at both a personal level and in a wider context**

*Your examples should indicate what actions you take to reflect on your statistical practice with a view to improving either your own performance or that of others. Examples could include but are not limited to:*

- *Identification of lessons learned from activities undertaken by yourself or by others for whom you are responsible; such as what went well, went badly or was lacking*
- *Evaluation of the effectiveness of statistical methods and tools used*
- *Development of recommendations for future enhancements or modifications to procedures or working practices in order to achieve improvements* **Assessment process for CStat applications via the competence based route**

The initial submission (standard application form and additional information for the competence based route) will be considered by members of the Professional Affairs Committee (PAC). The Committee may request further details or clarification, either in relation to the standard application form or the additional information in respect of the competence based route. Depending on the nature of the additional information needed, PAC will decide as to whether this is best gathered by a written submission or via an interview. The RSS Professional Affairs and Examinations Manager will write to the applicant raising questions and/or requesting information, indicating whether the response of the candidate should be by a written submission or at an interview.

In the case of a written submission, once the information is received, the application will be passed back to PAC for further review at its next meeting.

In the case of an interview, the RSS Professional Affairs Manager will liaise with the applicant and provide full details of the format that this will take.

## **ANNEX - Academic criteria for CStat via Standard route**

To fulfil the academic requirements for the standard route to CStat, candidates must meet at meet the Society's standards for a Graduate Statistician:

### ***Graduates must have a good knowledge of***

- the frequentist and Bayesian methods for conducting data analyses
- their logical foundations, including relevant probability theory
- the principles of systematic data collection, management and curation

### ***They can use this knowledge, together with software and programming skills, to***

- build, assess and refine models appropriate for describing and understanding a wide variety of processes or problems
- draw appropriate inferences from them
- effectively communicate both substantive results and the nature of the uncertainty inherent in them, to expert or lay audiences.

***They are aware of the implications of their work for the rights of individuals, are trustworthy, maintain the highest ethical standards and work for the public good.***

In addition to the above, qualifications must meet at least one of the following three criteria:

1.

- a. a UK Bachelors degree of classification 2:2 honours or better (or equivalent under UK NARIC) that was, at time of award, on the list of the Society's accredited degrees. Holders of a non-accredited UK Bachelors degree programme must have completed a combination of modules that successfully meet the Society's standard for a Graduate Statistician as mentioned above [to be evidenced by a copy of the transcript and degree certificate];

OR

- b. a UK Masters level degree of classification pass or better (or equivalent under UK NARIC) that was, at time of award, on the list of the Society's accredited degrees. Holders of a non-accredited UK Masters level degree programme must have completed a combination of modules that successfully meet the Society's standard for a Graduate Statistician as mentioned above. [to be evidenced by a copy of the transcript and degree certificate];

OR

- c. more than one degree at UK Bachelors, Masters and/or Doctoral level (or equivalent under UK NARIC) of classification as given in 2 a. and/or 2 b. The degrees must in combination successfully meet the Society's standard for a Graduate Statistician as mentioned above [to be evidenced by copies of transcripts, degree certificates, module / unit descriptions including learning outcomes and candidate's dissertation / research project (or equivalent)];

3.

The Society's Graduate Diploma [this award can be verified from the Society's records]. Exceptionally, where an applicant has partially completed the Graduate Diploma but does not hold the award, they may submit evidence of further study that successfully meet the Society's standard for a Graduate Statistician as mentioned above. [to be evidenced by a copy of module/unit descriptions and award letters for any further study].

For UK undergraduate Honours Degrees (including enhanced undergraduate degrees of the MMath type), the content must meet the Society's standard for a Graduate Statistician as mentioned above. Joint degrees in Statistics and/or with other subjects or those with a high content of statistics-based modules, where the high-level statistics content is substantial, might also qualify.

For UK taught Masters degrees (usually MSc), the content must successfully must meet the Society's standard for a Graduate Statistician as mentioned above.

For overseas degrees, a broad equivalence with UK degrees as set out above is required. The Society is normally guided by UK NARIC (the National Recognition Information Centre for the United Kingdom) in assessing the level of overseas degrees. In some cases, the level of MSc is a necessary requirement.

For research degrees, whether at Masters level (often called MPhil) or at Doctors level (PhD), it will be necessary for an applicant to demonstrate a breadth of study as well as the depth that is inherent in research work which successfully must meet the Society's standard for a Graduate Statistician as mentioned above. This might for example be achieved by taking some taught courses alongside the research work, or it might be implicit in an undergraduate degree obtained previously.

All qualification(s) are assessed for being appropriate by the Professional Affairs Committee. Some university courses are formally accredited; other cases are considered on an individual basis.

The criteria also make reference to the Society's own professional examinations and to the transition arrangements put in place for candidates who had partially completed the Graduate Diploma prior to its withdrawal after the May 2017 examination session.

May 2020