

Preface

This textbook is based on a course at Anglia Polytechnic University (APU) of the same name, the introduction of which represented a paradigm shift in the teaching of statistics to biologists. We moved from a math-centred approach to a “by biologists for biologists” approach. Building confidence and motivation, as well as knowledge and skill, became explicit aims. It worked—failure rates plummeted while understanding and interest blossomed.

Biomeasurement, the course, runs over a twelve-week semester, corresponding to the twelve chapters in *Biomeasurement*, the book. Students on the course are timetabled for three hours per week. Each week starts with a lecture and then the class is broken down into groups of around twenty with typically a lecturer and a postgraduate sharing responsibility for each tutorial. In some cases those leading the tutorials have had almost as much to learn about statistics as the students, but this does not matter: The tutorial materials are provided and a sense of going through them and learning together works well. The hands-on “active learning” aspect of the tutorial is very important. We assess the students through three pieces of coursework and a test. Work for some of the assignments is carried out in tutorial time, as is the test. We are going to make lecture, tutorial, and assignment material available through the *companion web site*.



While *Biomeasurement* explains how to carry out techniques and why they are needed, it does not explain how the underlying math work. Mathematicians often disapprove of this approach. To them I say that unless you start with this approach then you will recruit very few biologists to the study of statistics, and biology desperately needs such sons and daughters. With *Biomeasurement* I hope to leave young scientists chomping at the bit for more—both wanting and able to read more mathematically orientated texts. It might not seem like it to them at first but actually I am on the mathematicians' side.