| | Scheme of Work S2 | | |
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| **Week** | **Topic** | **Prep** | **Lesson Starter** |
| **DISCRETE R.V.s: 1) Binomial distribution** | | | |
| **1** | Factorial notation and the number of arrangements, The binomial distribution, Conditions for a binomial distribution | Ex 1A Q1-3<br>Ex 1B Q1-8 | Discussion on contents of S2 2 Discrete Models: Binomial Poisson / 3 Continuous: Uniform Functions Normal / Populations & Samples / Hypothosis Testing |
| **2** | Binomial cumulative distribution function | Ex 1C Q1-10 | Memory Test: Specify Binomial conditions |
| **3** | Mean and variance of a binomial distribution, Harder problems | Ex 1D Q1-6<br>Ex 1E Q1-9 | Memory Test: Specify Binomial conditions |
| **DISCRETE R.V.s: 2) Poisson distribution** | | | |
| **4** | Exponential series and the Poisson distribution | Ex 2B Q6-8<br>Ex 2C Q1-3 | Memory Test: Specify Binomial conditions & Mean & Variance Formulae |
| **5** | The mean and variance of a Poisson distribution, The Poisson cumulative distribution function, Conditions for a Poisson distribution | Ex 2C Q4-10<br>Ex 2D Q5-9 | Memory Test: Specify Binomial conditions & Poisson conditions |
| **6** | **MOCK WEEK** | | |
| **7** | The Poisson approximation of a binomial distribution, Choosing a binomial or Poisson distribution | Ex 2E Q1-5<br>Ex 2F Q1-10 | Memory Test: Specify Poisson Prob Formula & Conditions |
| **Oct: HALF TERM** | | | |
| **3) Continuous random variables** | | | |
| **8** | Continous random variables and their probability density functions, The cumulative distribution function | Ex 3A 3B | Memory Test: Specify Binomial & Poisson Mean & Variance Formulae / Specify conditions for Poisson approx of a Binomial |
| **9** | The mean and variance of a PDF | Ex 3C | Memory Test: PDF Key Points 1i & 2: Page 63 |
| **10** | Finding the mode, median and quartiles of a continous random variable, Continuous uniform/ rectangular distribution | Ex 3D 3E | Memory Test: PDF Key Points 1 & 2: Page 63 |
| **4) Continuous Uniform distribution** | | | |
| **11** | Finding the mode, median and quartiles of a continous random variable, Continuous uniform/ rectangular distribution | 4A 4B | Memory Test: Binomial & Poisson formulae & conditions for Poisson approx to Binomial |

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| **12** | *Exam Practice: Review Exercise 1 Odds Q1-15 Page 64* | *Review Ex 1 evens 2-16* | Memory Test: PDF Key Points 1,2,3 Page 63 |
| **13** | **MOCK WEEK** | | |
| **14** | Choosing the right model. Using Uniform for distribution of rounding error | 4C Set PPQ on Chapter 1-4 for Xmas | Memory Test: Specify for Continuous pdf: f(x) Mean Variance & F(x) |
| **CHRISTMAS** | | | |
| **5) Normal approximations** | | | |
| **15** | Continuity correction / Approximating a binomial distribution by a normal distribution | Ex5A Ex5B | Memory Test: Specify for Continuous pdf: f(x) Mean Variance & F(x) |
| **16** | Approximating a Poisson distribution by a normal distribution / Choosing the appropriate approximation | Ex5C Ex 5D | Memory Test: Specify Binomial & Poisson Mean & Variance Formulae / Specify conditions for Poisson approx of a Binomial |
| **6) Population and samples** | | | |
| **17** | Populations, censuses and samples / Understanding the concept of Sampling | Ex 6A | Memory Test: Specify conditions for: Poisson approx of a Binomial, Normal Approx of a Binomial, Normal Approx of a Poisson |
| **18** | *Exam Practice: Review Exercise 2 Page 126 Chapter 4 & 5 Qs only* | Set PPQ on Chapter 1-5 | Memory Test: Advantages & Disadvantages of: census & sampling |
| **19** | **MOCK WEEK** | | |
| **20** | Simple random sampling, The concept of a statistic, The sampling distribution of a statistic | Ex 6B Ex 6C | Memory Test: Advantages & Disadvantages of: census & sampling, Define Sampling Unit, Sampling Frame, Forms of Sampling Frame list etc. |

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| **FEB HALF TERM** | | | |
| **7) Hypothesis testing** | | | |
| **21** | The concept of a hypothesis test / The significance level of a hypothesis test / One and two tailed tests / DOING a Hypothesis test on Binomial and Poisson parameters | Ex7A Ex 7B | Memory Test: Define Simple Random Sampling / unrestricted random sample / a statistic |
| **22** | Finding CRITICAL VALUES: Hypothesis test for the proportion 'p' of a binomial distribution and the hypothesis tests for the mean 'lambda' of a Poisson distribution USING CRITICAL REGIONS | Ex 7C | Memory Test: Specify conditions for: Poisson approx of a Binomial, Normal Approx of a Binomial, Normal Approx of a Poisson |
| **23** | *Exam Practice: Review Exercise 2 Page 126 Q1-21 Chapter* | Set PPQs for revision | Memory Test: PDF Key Points 1,2,3 Page 63 |
| **24** | **MOCK WEEK** | | |
| **25** | Hypothesis Testing Review | Ex 7D & PPQs for Easter | Memory Test: Advantages & Disadvantages of: census & sampling, Define Sampling Unit, Sampling Frame, Forms of Sampling Frame, random sample, a statistic |
| **EASTER** | | | |
| **26** | PPQs | PPQs | Memory Test: Define Simple Random Sampling / unrestricted random sample / a statistic |
| **27** | PPQs | PPQs | Memory Test: Specify conditions for: Poisson approx of a Binomial, Normal Approx of a Binomial, Normal Approx of a Poisson |
| **28** | PPQs | PPQs | Memory Test: PDF Key Points 1,2,3 Page 63 |
| **29** | PPQs | PPQs | Memory Test: Advantages & Disadvantages of: census & sampling, Define Sampling Unit, Sampling Frame, Forms of Sampling Frame, random sample, a statistic |
| **30** | PPQs | PPQs | Memory Test: All Key Points |
| **31** | PPQs | PPQs | Memory Test: All Key Points |