Advanced Placement Credit Test 2008
Module Template

1.	**Module Code:**	ST1131
2.	**Module Title:**	Introduction to Statistics
3.	**Modular Credits [MC]:**	4
4.	**Module Description:**	This module introduces students to the basic concepts and the methods of statistics. A computer package is used to enhance the effect of learning and to enable students to analyze complicated data.
5.	**Module Content/Syllabus:** (to include topics to be covered)	**1. Descriptive Statistics** • Types of data • Graphical presentation of data • Numerical summaries of data **2. Gathering Data** • Good ways and poor ways to sample • Good ways and poor ways to experiment • Other ways to perform experimental and observational studies **3. Probability** • Randomness • Find conditional probabilities • Applying the probability rules **4. Probability Distributions** • Discrete probability distributions • Continuous probability distributions • Sampling distributions **5. Statistical Inferences** • Confidence intervals • Significance tests about hypotheses • Comparing two groups **6. Association** • Association between two categorical variables • Association between two quantitative variables • Inferences about the association

6.	**Tutorial/Assignment Sample Questions** (you may attach the Qns as an appendix to this document)	Nil
7.	**Recommended Textbooks/Readings:**	1. Alan Agresti and Christine A. Franklin. Statistics: The Art and Science of Learning From Data. (ISBN: 0130083690). 2. David S. Moore. Statistics: Concepts and Controversies. (ISBN: 0716740087) 3. Moore, D.S. and McCabe, G.P. Introduction to the Practice of Statistics. (ISBN: 071676282X)
8.	**Exam Format:** (please indicate the duration and assessment format, e.g. MCQ, Short-answer Qns, Essay Qns)	(i) Duration: 2 hours (ii) Assessment Format: 4 questions
9.	**Sample of Exam Questions:** (you may attach the Qns as an appendix to this document)	a) Let X = number of days in the past week in which a randomly selected person felt anxious and tense. According to a recent General Social Survey, the probabilities for the potential values of X for adult Americans are approximately: X 0 1 2 3 4 5 6 7 P(X) 0.28 0.20 0.15 0.11 0.07 0.07 0.02 0.10 Find the mean of this probability distribution. Interpret. b) Serum cholesterol is an important risk factor for coronary disease. The level of serum cholesterol is approximately normally distributed with a mean of 219 mg/dL and a standard deviation of 50mg/dL. If the clinically desirable range for serum cholesterol is < 200 mg/dL and serum cholesterol level of over 250mg/dL indicates a high-enough risk for heart disease to warrant treatment, what is the probability that a randomly selected person will have a borderline high serum cholesterol level, that is, >200, but < 250mg/dL? c) To estimate the mean acreage of ranches in Alberta, Canada a researcher plans to obtain the acreage for a random sample of 64 farms. Results from an earlier study suggest that 800 acres is a reasonable guess for the standard deviation of ranch size.

		i. Find the probability that the sample mean acreage fall within 100 acres of the population mean acreage. ii. If the researcher can increase the sample size above 64, will the probability that the sample mean falls within 100 acres of the population mean increase or decrease? Why?