

University of Salahaddin-Hawler
College of Science
Department of Computer Science & Information Technology



Course Book

Statistics

Undergraduate Degree in Computer Science
2nd Year Class
Academic year 2015-2016

Assistant Instructor

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M.Sc.degree in Applied Mathematics

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Class hours : Sunday 10:30 am – 12:30 pm Group -A-
Wednesday 10:30 am – 12:30 pm Group -B-
Office hours: Monday 10:30 am- 12:30 pm

Format

2 hrs/week of lecture,

Unit Value: 2 units

Course Length: 13 weeks =1 course

Course Description

Statistics is the art of using data to make numerical conjectures about problems. Descriptive statistics is the art of summarizing data. Topics include: histograms, the average, the standard deviation, the normal curve, correlation. Much statistical reasoning depends on the theory of probability. Topics include: chance models, expected value, standard error, probability histograms, convergence to the normal curve. Statistical inference is the art of making valid generalizations from samples. Topics include: estimation, measurement error, tests of statistical significance.

Course Goals

This course aims at providing students with a basic understanding of descriptive statistics (summarizing data) , inferential statistics (making valid generalizations from sample) and Probability theory.

Student Evaluation

Exam 1: 20 % marks.

Final exam: 30 % marks.

The examination schedule will be announced by the department.

Recommended references

[1] D.H.Young and S.D.Al.Saadi , Statistical Theory and Methods.,

[2] William Feller , An introduction to probability theory and its application

[3] D.R.Cox , Applied Statistics

Weekly Topics

Statistics

week 1 : Introduction

aims and objectives, the use of probability and statistics in Computer Science.

week 2,3 : Descriptive statistics:

graphical presentation of data, measures of location and dispersion.

week 4: Introduction to probability:

axioms, independence, conditional probability.

week 5: Examples of applications of probability in computer science.

week 6: Permutation and Combinations.

Week7: Exam

Week8: Discrete random variables binomial.

week 9: Examples of applications of binomial in computer science.

week 10: Discrete random variables Poisson, and applications, mean and variance.

week 11: Examples of applications of Poisson in computer science.

week 12&13: Continuous random variables: probability density function, uniform, normal distributions and applications, mean and variance.

Final exam will be determined by the exam board of the college.

Notice that This syllabus may be subject to changes; we may take either longer or shorter time to finish them.