

# Course Plan



**Educational group:** Production engineering and plant genetics

**Course Name:** Statistics and Possibilities

**Teaching Degree:** Bachelor

Class teaching hours per week: 3 hours

**The general goal of the course:** to familiarize students with the concepts of statistics and their probabilities and applications in biological and agricultural sciences

Schedule table and desired topics for teaching and evaluation

Training session	date	subject
1st week	Session 1	Introduction and definitions, plural sign and its use
2nd week	Session 2	Classification and arrangement of data (frequency distribution table, frequency types, frequency charts, random variables)
3rd week	Session 3	Indices of central tendency (median, mode, parks, means)
4th week	Session 4	Dispersion indices (general range of changes, average quartile, average deviation)
5th week	Session 5	Continuing the discussion of dispersion indices (variance, standard deviation, dispersion coefficient, variance of the community of differences and sums)
6th week	Session 6	Counting rules (ordering, converting and combining)
7th week	Session 7	Familiarity with SAS software
8th week	Session 8	Probabilities (simple and compound, laws of addition and multiplication of probabilities, conditional probability, Yeats' law)
9th week	Session 9	Probability distributions (binomial distribution, Poisson distribution, normal distribution, standard normal)
10th week	Session 10	Sampling and estimation of samples, ...
11th week	Session 11	Statistical judgments (statistical assumptions and statistical errors)
12th week	Session 12	t distribution and its applications (paired and unpaired observations)
13th week	Session 13	Chi Squared distribution and its applications
14th week	Session 14	F distribution and introduction to variance analysis
15th week	Session 15	Relationship between variables (correlation and regression)
16h week	Session 16	Familiarity with non-parametric statistics and related tests

**\*Assessment and evaluation of students:**

Method	Score	Time	Method
Continuous evaluation	3	During the semester	exercise
midterm exam	7	The sixth session	Descriptive questions
End of semester exam	10	According to the training program	Descriptive question

In the case of theoretical courses, the time of the end-of-semester exam is according to the fixed date of the exam that is included in the student's unit selection sheet

Practical: solving problems with emphasis on examples related to agriculture and familiarity with SAS statistical software

**\*Reference:**

Rezaei, A.M. 2016, concepts of statistics and probabilities, Mashhad publication.

**Teacher: Mohammad Golbashy**