

### UNDERGRADUATE COURSE DESCRIPTIONS for the Degree of Bachelor of Science in Agricultural Sciences: *Agronomy & Plant Breeding*

**36260 General Agronomy** 3 Cr. Crops classification, plant organs, environment, seedbed, date, rate and depth of planting, planting machinery, irrigation, thinning, cultivation, transplanting, fertilizers, insects, diseases, weeds, harvesting, rotation, storage.

**Prerequisite:** Plant Science I, 36101.

**36262 Cereal Crops** 3 Cr. Origin morphology, adaptation, varieties, rotation, seedbed, fertilizer, date and method of planting, irrigation, weeds, insects, diseases, harvesting and storage are discussed for cereal crops.

**Prerequisite:** General Agronomy 36260.

**36263 Genetics** 3 Cr. History of genetics, mendelian genetics, monohybrid crosses, dihybrid crosses, linkage and crossing over, sex linkage, allelic interaction, gene interaction, DNA structure, replication, transcription, translation, mutation, chromosomal mutation, aneuploidy, euploidy, population and quantitative genetics.

**Prerequisite:** General Biology 36100

**36266 Probability & Statistics** 3 Cr. Frequency distribution, measures of central tendency and dispersion, probability, binomial, poisson and normal distributions, estimation theory, test of hypothesis, t-x 2 and distribution, analysis of variance, chi Square test, regression and correlation, nonparametric statistics.

**36267 Experimental Design in Agriculture I** 3 Cr. Principles of experimental design, completely randomized design (CRD), Randomized Complete Block Design (RCBD), Latin Square Design (LS), Factorial Experiments, confounded design, split-plot design.

**Prerequisite:** Statistics 36266

**36361 Dryland Farming** 3 Cr. Climatology, soil suitability, environment, plant, seedbed, rotation, fertilizer, planting and weeds.

**Prerequisite:** General Agronomy 36260.

**36362 Weeds and Their Control** 3 Cr. Damages to agriculture, growth stages, classification, ecology and mechanical, ecological, biological and chemical controls of weeds. **Prerequisite** : Botany II, 36102.

**36363 Principles of Plant Breeding** 3 Cr. Plant reproduction and seed development. Apomixis in crop improvement. Self-incompatibility, self-sterility, selection in self pollinated crops. Selection in cross pollinated crops. Breeding Systems in self and cross pollinated crops. Hybrid varieties. Heterosis, heritability, general and specific combining ability.

**Prerequisite:** Genetics 36263

**36364 Breeding Field Crops** 3 Cr. Breeding, wheat, barley, triticale, rice, soybean, corn, sorghum, cotton, sugarbeets, sugarcane, flax, sunflower, and forage crops including alfalfa and clover. **Prerequisite:** Principles of Plant-Breeding 36363

**36365 Experimental Design in Agriculture II** 3 Cr. Confounding, split plot designs, nested and cross designs, expected value of mean square, combined analysis, ANOVA assumptions and data transformation, incomplete block designs.

**Prerequisite:** Experimental Design in Agriculture I 36267

**36366 Industrial Crops** 3 Cr. Origin, morphology, adaptation, varieties, rotation, seedbed, fertilizer, date and method of planting, irrigation, weeds, insects, diseases, harvesting and storage are discussed for oilseed, textile and sugar crops, potato and tobacco.

**Prerequisite:** General Agronomy 36260.

**36465 Pulse and Local Crops** 2 Cr. Origin, morphology, adaptation, varieties, rotation, seedbed, fertilizer, date and method of planting, irrigation, weeds, insects, diseases, harvesting and storage are discussed for pulse crops and saffron.

**Prerequisite:** General Agronomy 36260.