

## B.Sc. in Plant Production Study Plan

### ■ University Compulsory Courses 16 C.H Page ( 64 )

### ■ University Elective Courses 9 C.H Pages ( 64 & 65 )

### ■ Faculty Compulsory Courses 21 C.H

Line No.	Code	Course	
622040	PP204	PRINCIPLES OF AGRICULTURAL ECONOMICS	3
622621	PP262A	EXTENSION AND TRANSFER OF AGRICULTURAL TECHNOLOGY	3
901021	MATH102A	CALCULUS(FOR BIO.SCI.STUDENTS)	3
911031	CHEM103A	GENERAL CHEMISTRY	3
921031	PHY103A	GENERAL PHYSICS	3
931030	BIO103	GENERAL BIOLOGY	3
1731160	CS116	SELLECTED PROGRAMMING LANGUAGES	3

### ■ Department Compulsory Courses 77 C.H

Line No.	Code	Course	
622050	PP205	PRINCIPLES OF PLANT SCIENCE	3
622051	PP205A	PRINCIPLES OF PLANT SCIENCE (LABORATORY)	0
622130	PP213	INTRODUCTION TO BIOSTATISTICS	3
622240	PP224	PLANT PHYSIOLOGY	3
622241	PP224	PLANT PHYSIOLOGY	0
623110	PP311	FIELD CROP PRODUCTION	3
623111	PP311A	FIELD CROP PRODUCTION (LABORATORY)	0
623140	PP314	SEED PRODUCTION AND TECHNOLOGY	3
623141	PP314A	SEED PRODUCTION AND TECHNOLOGY( LABORATORY)	0
623210	PP321	VEGETABLE PRODUCTION	3
623211	PP321A	VEGETABLE PRODUCTION( LABORATORY)	0
623220	PP322	DECIDUOUS FRUIT TREES	3
623222	PP322	DECIDUOUS FRUIT TREES	0
623242	PP324B	PLANT PROPAGATION	3
623243	PP324	PLANT PROPAGATION	0
623411	PP341A	ENTOMOLOGY	3
623412	PP341B	ENTOMOLOGY( LABORATORY)	0
623422	PP342B	WEED SCIENCE	3
623423	PP342	WEED SCIENCE	0
623430	PP343	PLANT PATHOLOGY	3
623431	PP343	PLANT PATHOLOGY	0
623710	PP371	AGRICULTURAL MACHINERY	3
623711	PP371A	AGRICULTURAL MACHINERY (LABORATORY)	0
624001	PP400A	SUMMER TRAINING	6
624110	PP411	PLANT BREEDING	3
624210	PP421	EVERGREEN FRUIT TREES	3
624300	PP430	ORGANIC AGRICULTURE	2

624310	PP431	BIOTECHNOLOGY IN AGRICULTURE	3
624910	PP491	SEMINAR	1
632510	NF251	AGRICULTURAL BIOCHEMISTRY	3
642020	NR202	PRINCIPLES OF SOIL SCIENCE	3
642200	NR220	FOREST SCIENCE	3
642410	NR241	PRINCIPLES OF IRRIGATION AND DRAINAGE	3
642411	NR241	PRINCIPLES OF IRRIGATION AND DRAINAGE (LAB)	0
644120	NR412	SOIL FERTILITY AND FERTIZERS	3
911072	CHEM107B	GENERAL CHEMISTRY LAB	1
912170	CHEM217	ORGANIC CHEMISTRY	3
931070	BIO107	GENERAL BIOLOGY (PRACTICAL)	1
933413	BIO341C	MOLECULAR GENETICS	3

### ■ Department Elective Courses 9 C.H

Line No.	Code	Course	
623010	PP301	PRINCIPLES OF RURAL DEVELOPMENT	3
623161	PP316A	SOIL-PLANT-WATER RELATIONSHIPS	3
623230	PP323	FLORICULTURE	3
623231	PP323A	FLORICULTURE LABORATORY	0
623320	PP332	FORAGE PRODUCTION	3
623321	PP332A	FORAGE PRODUCTION LABORATORY	0
623461	PP346A	APICULTURE & BEE HIVES MANAGEMENT	3
623462	PP346B	APICULTURE & BEE HIVES MANAGEMENT( LABORATORY)	0
624140	PP414	INDUSTRIAL CROPS	3
624230	PP423	NURSERY MANAGEMENT	3
624241	PP424A	LANDSCAPE HORTICULTURE( LABORATORY)	0
624242	PP424B	LANDSCAPE HORTICULTURE	3
624420	PP442	DISEASES OF AGRONOMIC AND HORTICULTURAL CROPS	3
624441	PP444A	INTEGRATED PEST MANAGEMENT	3
624460	PP446	ECONOMIC ENTOMOLOGY	3
624461	PP446A	ECONOMIC ENTOMOLOGY LABORATORY	0
624510	PP451	FARM MANAGEMENT	3
624921	PP492A	SELECTED TOPICS	2
624922	PP492B	SELECTED TOPICS	1
624923	PP492A	SELECTED TOPICS	3
643310	NR331	RANGE MANAGEMENT	3
644540	NR454	NATURE RESERVES	3

**TOTAL 132 C.H**

**\* For prerequisite & equivalent courses see the Courses' Description.**

## B.Sc. in Plant Production

### Courses' Description

**PP 204 Principles of Agricultural Economics (3C, 3H)**

Principles of microeconomics. Demand, production, cost, supply and demand elasticity, and markets are presented and used in the analysis of decisions of individuals relating to agriculturally oriented problems.

**PP 205 Principles of Plant Science (3C, 3H)**

The relation of plant cytology, anatomy and morphology to production, management and use of crops, factors affecting growth, development and means of adaptation to environment. (Prerequisite: BIO 103)

**PP 213 Introduction to Biostatistics (3C, 3H)**

Descriptive statistics, data presentation, measures of central tendency, measures of dispersion, theory of probability, probability distributions, sampling distributions, estimation, testing hypotheses, analysis of variance, and simple regression (Prerequisite: MATH 102A)

**PP 224 Plant Physiology (3C, 2H, 3L)**

Water absorption and balance. Transport of solutes, photosynthesis, and respiration. Physiology of mycorrhiza and nitrogen fixing nodules. Plant growth and development. Plant hormones. Phytohormones and defense mechanisms in plants. (Prerequisite: PP 205)

**PP 262 Extension and Transfer of Agricultural Technology (3C, 3H)**

Concepts, principles, models, and approaches of extension services. Adoption and diffusion of agricultural innovation. Data collection and analysis. Extension program development.

**PP 301 Principles of Rural Development (3C, 3H)**

Theories and principles of rural development. Participatory development, transfer of technology, nature and constraints of rural-development. Needs assessment. Diffusion and communication processes. An overview of different types of rural development programs.

**PP 311 Field Crops Production (3C, 2H, 3L)**

Principles of field crops production. Crop classification, environmental factors affecting crop growth and development, cultural practices for production of major crops in Jordan: seeding methods, tillage, weed control, harvesting methods, crop rotations. (Prerequisite: PP 205)

**PP 314 Seed Production and Technology (3C, 2H, 3L)**

Seed formation and development, seed chemistry, seed germination, seed dormancy, seed viability and vigor testing, seed quality attributes and determinants. Principles of seed production, certification, quality control in seed production (Prerequisite: PP 311)

**PP 316 Soil-Plant-Water Relationships (3C, 3H)**

Water flow in soil-plant-atmosphere continuum with emphasis on soil-root interface. Effect of soil physical and biological properties on growth and function of plant root systems. Transpiration and factors affecting water transport in plant. Dynamic properties of soil affecting water flow and soil water management. (Prerequisite: NR 202, PP 205) 2007/20089

**PP 321 Vegetable Production (3C, 2H, 3L)**

Production, adaptation, and utilization of vegetable crops. Practical aspects of growing vegetable crops: seedbed preparation, seeding, transplanting, mulching, composting, irrigation, fertilization and other cultural practices utilized in production of vegetable crops. (Prerequisite: PP 205)

**PP 322 Deciduous Fruit Trees (3C, 2H, 3L)**

Growing deciduous fruit trees (Pome, stone fruits and Pistachio). Production practices: planting, irrigation, fertilization, thinning, spraying, training, and pruning. (Prerequisite: PP 205)

**PP 323 Floriculture (3C, 2H, 3L)**

Commercial production of bedding, foliage, and bulbous plants. A comprehensive study of major and specialty cut flowers: classification, cultivars, botany, propagation, environmental factors affecting vegetative growth and flowering, physiological disorders, harvesting, postharvest handling, and scheduling. (Prerequisite: PP 205)

**PP 324 Plant Propagation (3C, 2H, 3L)**

Propagation by seed, cutting, layering, grafting, and budding. Propagation structures, media, containers, fertilizers, and sanitation. In vitro cultures. (Prerequisite: PP 224)

**PP 332 Forage Production (3C, 2H, 3L)**

Production, harvesting, utilization, and value of important forage crops. Adaptation, identification, and relative merits of grasses and forage legumes. (Prerequisite: PP 205)

**PP 341 Entomology (3C, 2H, 3L)**

Fundamental aspects of entomology including morphology, biology, physiology, ecology, taxonomy, and control of insects and related arthropods. Laboratory is devoted to classification, identification, collection methods and equipment. (Prerequisite: PP 205)

**PP 342 Weed Science (3C, 2H, 3L)**

Weed ecology, impacts, and weed-crop interaction. Weed management strategies with emphasis on herbicide families and mode of action. Practical sessions cover topics of weed identification, herbicide formulation, herbicide application equipment and calibration. (Prerequisite: PP 224, CHEM 217)

**PP 343 Plant Pathology (3C, 2H, 3L)**

Importance, classification, and diagnosis of plant diseases. Infection and development of plant diseases. Geographical distribution and dispersal of inocula of plant diseases. Infectious diseases caused by fungi, bacteria, viruses, nematodes, and parasitic plants. Non-infectious diseases. Disease control methods. (Prerequisite: PP 224)

**PP 346 Apiculture and Beehives Management (3C, 2H, 3L)**

Importance of beekeeping in the world and especially in Jordan. History and development of beekeeping nationally and internationally. The bee colony, its casts, and life history. The honey bee races. Beekeeping equipment. Anatomy of honeybees. Internal and external activities. Beehive and queen management. Removing and marketing the crop. Infectious and non-infectious honey bee pests. (Prerequisite: PP 341) 2007/2008

**PP 371 Agricultural Machinery (3C, 2H, 3L)**

Functional requirements and basic principles of machines for production and handling of crops. Care, capacity of tillage, planting, spraying, harvesting and materials handling machinery. (Prerequisite: NR 202, PP 205)

**PP 400 Summer Training (6C, 18L)**

Practical training in the area of plant production. No simultaneous courses could be registered with these courses. (Prerequisite: Completion of 90 C.H)

**PP 411 Plant Breeding (3C, 3H)**

Basic techniques used in improvement of economic crop plants through principles of genetics such as selection, hybridization, and related sciences. (Prerequisite: BIO 341, PP 314)

**PP 414 Industrial Crops (3C, 3H)**

Production principles for industrial crops of regional importance with emphasis on cotton, safflower, sesame, sunflowers, and aromatic and medicinal plants. (Prerequisite: PP 205)

**PP 421 Evergreen Fruit Trees (3C, 3H)**

Production and growth of evergreen fruit trees including citrus fruits, olives, avocados, and other subtropical fruit crops. (Prerequisite: PP 205)

**PP 423 Nursery Management (3C, 3H)**

Establishment and management of wholesale and retail nurseries. Propagation, planting, culture, digging, packing, shipping, and storing of nursery stocks. Inspection and quarantine regulations. Financial management of nurseries. (Prerequisite: PP 324)

**PP 424 Landscape Horticulture (3C, 2H, 3L)**

Objectives and principles of landscaping and xeriscaping. The outdoor room concept. A study of major landscape plant groups: narrowleaf evergreens, trees, shrubs, hedges and shrub borders, vines, ground covers. Lawn establishment and maintenance. Maintenance of the landscape. The landscape design process. Landscape graphics: freehand drawings, concept drawings, drafting, presentation plans. Pricing landscape designs and maintenance. Computer applications in landscaping. (Prerequisite: PP 205)

**PP 430 Organic Agriculture (2C, 2H)**

Methods of organic farming of agronomic and horticultural crops. Production methods, management of weed and pests. Labeling and marketing of organic produce. (Prerequisite: PP 321)

**PP 431 Biotechnology in Agriculture (3C, 3H)**

Overview of the theoretical background and principles of plant biotechnology as well as its practical application in research and development of new plant cultivars. Specific topics are: recombinant DNA technology, identification and isolation of genes, gene cloning, gene transfer, and plant tissue culture. Other topics to be presented and discussed are: current technical, environmental, and ethical issues related to genetically modified foods as well as the impact of plant biotechnology on agriculture and the economy. (Prerequisite: NF251, Bio 341) 2007/2008

**PP 442 Diseases of Agronomic and Horticultural crops (3C, 3H)**

Etiology, epidemiology and management of agronomic and horticultural crop diseases of economic importance in Jordan. Disease caused by fungi, oomycetes, bacteria, viruses and nematodes will be discussed in addition to physiological disorders. (Prerequisite: PP 343)

**PP 444 Integrated Pest Management (3C, 3H)**

Basic concepts of integrated pest management emphasizing ecological principles, integration of chemical, biological, cultural, and physical tactics into an overall strategy for the agroecosystem. Pesticides, cultural practices, host resistance, biological control, sterility principles. Economics of pest control and pest/host relationships. (Prerequisite: PP 341, PP 343 or concurrent with PP 343)

**PP 446 Economic Entomology (3C, 2H, 3L)**

Recognition, life history, habits, and management of economically important insects of field, fruit, and vegetable crops. (Prerequisite: PP 341)

**PP 451 Farm Management (3C, 3H)**

Economic principles applied to management of agribusiness: budgeting, record analysis, financial management. Investment appraisal and risk management. (Prerequisite: PP 204)

**PP 491 Seminar (1C, 1H)**

Individual term paper presentation and group discussions by students on current subjects and problems within the area of field crops or horticulture. This course cannot be repeated for credit. (Prerequisite: Completion of 90 CH)

**PP 492 Selected Topics (3C, 3H or 2C, 2 H or 1 C, 1H)**

This course covers topics related to plant production which are not covered in other courses. A student can register this course for one time only. (Prerequisite: Completion of 90 CH)