Courses/syllabi	Credit	Semester
Farm Management (PNE 2206); This course covers the procurement of inputs (production, labor, capital, raw materials, energy), the process of transformation (location, layout, design process, structuring production equipment, manpower allocation, capacity planning, scheduling, selection of technology) and monitoring the output both quantity and quality.	2/0	2
Environmental & Natural Resource Economics (PNE 3216): definition of natural resources, application of theory and welfare benefit cost analysis in natural resource management, externalities and government policy, the efficiency in the utilization of land resources, land valuation and compensation, land tax, land use planning, efficiency in water use, optimization of forest management , optimization fishing, mineral and energy resource use, conservation and preservation of natural resources, pollution and environmental pollution, environmental impact analysis.	2/1	2
Social Change (PNP 3107): Definition of social change and the process of social change and community ; theory of social change, the process of social change, the sources of social change; dimensions and levels of social change, public response to social change, the impact of social change, modernization and economic development; dynamics of social structure society-economy; cases of social change in agriculture and rural development; social planning.	2/0	1
Crop Physiology (PNA 3108): Growth analysis includes observation and calculation. Observation of the relationship between variables related to outcome. Factors that affect plant physiological processes, growth and yield of crops include canopy architecture, source and sink relationships of plant. Environmental factors that influence the physiological processes, growth and yield of crops such as water, light, and temperature.	2/1	1
Production of Annual Crops (PNA 3144): Definition, classification, specific properties of each group of crops. Influence of genetic factors, soil, climate and geography on the growth and yield of plants. Method and system of crop cultivation includes seedbed cultivation, planting, cropping patterns and systems as well as, maintenance. The methods of cultivating sugarcane, tobacco, cereals, legume cover crops, fiber crops and root crops.	2/1	1
Principles of Ecology (PNA 1220): Preliminary studies the interrelationships between plants and the environment, the plant response to environmental conditions (weather, temperature, light with plants as part of the plants population, competition (including residues, allelopathy) and the relationship between plants; This subject introduce to agroecosystems	2/1	1

Cultivation of Perennial Crops (PNA 3248): Definition, classification, special characteristics and requirements for growing of each group perennials. Method and system of cultivation include land clearing, seeding, planting, maintenance, pruning, cover crops, and crop diversity of crop protection and harvesting. Methods of the land clearing and land conservation, making planting holes, spacing patterns, and planting. Plant maintenance includes thinning, fertilizing and and weeding. Trimming includes a form, manner and purpose of pruning. Wide and weaknesses of shade trees and ground cover crop; Special case of perrenial cultivation	2/1	2
Soil Microbiology(PNM 3261): This course provides knowledge about the microbial population in the soil; the methods for studying microbe role in the farming systems, soil fertility, recycle nutrients, and their interactions with plants and soil.	2/1	2
Principles of Plant Protection (PNH2110)Understanding the role of crop protection in agricultural production system and economics development. Definition of pests in general sense which include pest, pathogen, and weed. Biology and ecology of pests. Historical perspective for the development of concepts in crop protection, its impacts and consequences: eradication, control, and management. Management, strategies, and tactics in crop protection from the economic stand point. Current problems and policies in crop protection.	2/0	1
Principles of Plant Pathology (PNH2230): The importance of plant diseases. Conceptual development of diseases. Examples of plant pathogens. Interaction between plant and pathogen at cellular level, plant tissue, and plant population. The impact of external factor on the development of diseases. Diagnosis and management of plant diseases. Examples of economically important plant diseases.	2/1	2
Principles in Pest Science (PNH2220) : Pest and crop interaction. Yield loss assessment and control threshold. Ecological basic of pest management. Monitoring and sampling procedure. Basic components of integrated pest management. Pest control using resistant variety. Development of transgenic crops. Plant quarantine. Biological control. Chemical control. Pest management for food, horticultural, and estate crops. Crop protection policies.	2/1	2
Soil Management (PNT 4120): Physical, chemical and biological soil management; dryland farming, shifting cultivation, paddy system, surjan system, multiple cropping system, monocultures, alley cropping system; Soil management for problematic soils, such as peat soil, acid sulfate soil, saline soils, sodic soil, acidic mineral soil.	2/0	1

Principles of Aquaculture (PIB 2211). Definition and scope of aquaculture; the role of aquaculture in resources sustainability and human being; site selection and requirements of aquaculture development; recognition of aquatic animal and plant, water resources and aquacultural impounding; technology: extensive, semi-intensive and intensive; aquaculture management: ponds preparation, fish seed, fertilizing and feeding, water quality management, pest and diseases, post harvest and marketing; and prospects and problem in aquaculture development.	2/0	4
Introduction of plant breeding (PNB 2221) Life cycles and reproduction of plant, flower development, pollination and fertilization. Plant genetics variability, domestication and introduction. Plant genetics. Methods of plant breeding, heritability and selection improvement. Seed production and seed program, plant property right.	**2/1**	2