

YOSEMITE REGIONAL OCCUPATIONAL PROGRAM

GREENHOUSE MANAGEMENT AND PLANT PRODUCTION ROP

CBEDS Codes: 4054

JOB TITLES

DOT NO.

Garden Center/Nursery Assistant
Gardener
Ground Maintenance Assistant
Gardener
Greenhouse Technician
General Nursery Sale/Assistant
Greenhouse Production Worker
Horticulture Assistant
Horticulture Sales
Interior Landscaper Assistant
Interior Plant Technician
Irrigation Technician
Nursery Container Assistant
Nursery Customer Sales and Service
Nursery Production Assistant
Perennial and Annual Grower Assistant
Plant Breeder Assistant
Plant Health Care Technician
Propagator
Seed Production Assistant

Course description:

Greenhouse Management and Plant Production ROP is a two-semester class that is designed to introduce and develop entry-level skills and experience associated with the operation and production of a commercial greenhouse. Students will obtain skills in the area of horticulture, floriculture, business sales and communications and plant science. Emphasis will be focused in a hands-on learning approach. This course will prepare students for entry into the work force or to continue their education at a community college.

Prerequisites:

None

DURATION: up to 180 total hours

CREDIT: 10

Instructional Content: Instruction will include:	Student Outcomes At the end of instruction, the student will be able to:	Hours CL=Classroom L=Lab			
1. Introduction. 1. Course Objective 2. General Overview 3. Grading	Goal: The student will understand the general principles of Greenhouse Operations and Management. A. Understand the operation of the Greenhouse B. Define & demonstrate Careers/Job Market/Employability. C. Participate in leadership/management. D. Understand the need for leadership & management in the field. E. Analyze systems within the field solve problems.	Anchor/CR A1, A2, A3, A5, A9, A11 CR1 CR2 CR3 CR5 CR8	CTE F8.1 F9.1	CL 3	L
2. Safety. 1. General greenhouse safety. 2. Proper clothing & grooming. 3. Safe use of hand & power tools. 4. Restraint systems. 5. Emergency fire & disaster procedures. 6. OSHA rules & regulations. 7. Waste & material disposal. 8. Safe operation of tractors and farm equipment. 9. Safe use of chemicals and pesticides	Goal: Student will understand the health hazards, safety practices, & environmental hazards related to their work in the greenhouse. A. Comply with greenhouse safety. B. Wear eye protection. C. Describe proper clothing & grooming. D. Use hand & power tools safely. E. Understand the relationship safety factors, seat belts, roll guard in cabs. F. Follow emergency fire & disaster procedures. G. Comply with OSHA rules & regulations. H. Handle & dispose of materials safely.	A1, A2 A6 A9 CR1 CR2 CR6	F9.2 F9.3	2	2
3. Horticulture Careers. 1. Explore career options in the horticulture industry	Goal: Understand career paths and employment opportunities in the horticulture industry. A. Explore careers B. Identify skills necessary to gain entry level employment. C. Practice interview skills	A1, A2 CR1 CR2 CR3 CR12		2	

Instructional Content: Instruction will include:	Student Outcomes At the end of instruction, the student will be able to:	Hours CL=Classroom L=Lab			
4. Leadership 1. Practice team work 2. Community Service 3. Membership in an organization 4. Completion	Goal: The student will understand the role that leadership plays in the work environment. A. Participate in committee work. B. Be a member of a team. C. Learn skills that will lead to being a good citizen.	Anchor/CR A2, A7, A9 CR1 CR2 CR7 CR8	CTE	CL 2	L 5
5. Plant Physiology 1. Root structure and function 2. Leaf structure and function 3. Stem structure and function 4. Flower structure and function	Goal: The student will be able to apply their knowledge of plant physiology and demonstrate that knowledge. A. Name and identify root parts and function. B. Name and identify leaf parts and function. C. Name and identify stem parts and function. D. Name and identify flower parts and function.	A1 A2 CR1 CR2	F2.1 C11.1 C11.2 C11.5 G1.0	5	15
6. Environmental Requirements for Good Growth 1. Factors for good growth 2. Soil structure 3. Chemical fertilizers 4. Organic fertilizers 5. Major elements of fertilizer 6. Minor elements of fertilizer	Goal: The student will understand basic needs of plants. A. List the factors effect roots. B. Describe the difference of sand, silt and clay C. Soil pH D. Balanced fertilizer E. Above ground requirements for good growth F. Understand the major and minor plant nutrients and the growth function	A1 A2 A5 CR1 CR2 CR5	F2.1 F2.4 F2.6 G6.2 G6.1 C10.1 C10.2 C10.4	5	10
7. Integrated Pest Management 1. Understand the control of plant pests 2. Identify common plant pests	Goal: The student will understand basic methods of pest identification and control. 1. Outline common plant pests 2. Explain common biological pest control methods 3. Explain integrated pest control 4. List common chemical control methods 5. Proper methods of pesticide application 6. Safe storage of pesticides	A1 A2 A5 A6 CR1 CR2 CR5 CR6	C12.1 C12.2 C12.3 G5.1 G5.2 G5.3 G5.4 G5.5 F4.2 F4.1 F4.4	5	15

Instructional Content: Instruction will include:	Student Outcomes At the end of instruction, the student will be able to:	Hours CL=Classroom L=Lab			
8. Growth Stimulants, Retardants and Rooting Hormones 1. Understand the 4 growth regulators used in the horticulture industry	Goal: The student will understand the interrelationships of growth regulators in producing top quality plants A. Substance used to stimulate growth B. Name commonly used growth retardants C. Explain and use rooting hormone	Anchor/CR A1 A2 CR1 CR2	CTE F2.6 F2.4	CL 5	L 10
9. Seeds 1. Plant propagation using seed	Goal: The student will understand basic needs of successful seed germination A. Identify parts of a seed B. Use and understand indirect and direct seeding C. Prepare medium for seed germination D. Understand proper condition for seed germination E. Transplants plant plugs	A1 A2 A11 CR1 CR2 CR5	F3.2 G3.2 F5.5	5	15
10. Softwood and Semi hardwood cuttings 1. Collect and root softwood cuttings 2. Collect and root semi hardwood cuttings	Goal: The student will and demonstrate soft and semi hardwood cuttings A. Select and root plants using common cutting methods B. Use proper hormones to root plant cuttings C. Prepare proper media for plant cuttings	A1 A2 A5 A11 CR1 CR2 CR5	F3.2 5.5 F3.0 G4.2	5	15
11. Separation and Division 1. Propagate plants using separation and division	Goal: The student will understand importance of separation and division. A. Describe the process of separation and division B. Identify plants that can be propagated using separation and division C. Propagate plants by separation and division	A1 A2 A5 A11 CR1 CR2 CR5	F1.4 G2.4 F3.0	3	10
12. Fungicides 1. Identify common fungal diseases 2. Understand fungus control	Goal: Understand and apply knowledge of fungal diseases. A. Identify fungal diseases to effect the growth of plants in the greenhouse. B. Identify husbandry practices to prevent fungal growth C. Understand the commonly used fungicides in the greenhouse D. Practice the safe application of fungicides E. Understand the safe storage and disposal of fungicides	A1 A2 A6 A11 CR1 CR2 CR6 CR12	G5.2 G5.4 F4.0 F4.1 F4.2 F4.3 F4.4 C2.1 C2.2	3	5

Instructional Content: Instruction will include:	Student Outcomes At the end of instruction, the student will be able to:	Hours CL=Classroom L=Lab			
13. Herbicides 1. Proper selection and application of herbicides	Goal: Students will select and apply proper herbicides in the greenhouse. A. Identify common weeds B. Select proper herbicide for the control of weeds C. Understand the difference of selective non-selective herbicides D. Practice proper set up and use of sprayer equipment E. Understand practice safe use of pesticides F. Practice proper disposal and storage of pesticides.	ANCHOR/CR A1 A2 A6 A11 CR1 CR2 CR6 CR12	CTE G5.2 G5.4 F4.0 F4.1 F4.2 F4.3 F4.4 C2.1 C2.2	CL 3	L 10
14. Marketing. Understand the principle of sales and service	Goal: The student will know the basic procedure for profitable sale of plant materials. A. Develop a marketing plan. B. Use common marketing methods to sale plant materials. C. Practice marketing techniques.	A1 A2 A4 A7 A8 A11 CR1 CR2 CR3 CR4 CR5 CR6 CR7 CR8 CR9 CR10 CR11 CR12	A7.1 A7.2 A7.3 A7.4 A7.5 A7.6 A8.0 A8.1 A8.2 A8.3 A9.5 A9.7	5	15