Ministry of Higher Education and Scientific Research

Scientific supervision and evaluation device

Department of Quality Assurance and Academic Accreditation

# Academic program description form for colleges and institutes

## 2024 / 2023 For the year

University: Al-Furat Al-Awsat Technical University

College/Institute: Al-Musayyib Technical

Scientific Section: Plant Production Techniques

File filling date:

Signature:

Head of Department Name:

Dr. Mawaheb Medhat Hussein

Date 26/3/2024

Signature:

Scientific Associate Name:

. Dr.Muhammad Hadi Sabry

Date 3/26/2024

The file is checked by : Department of Quality Assurance and University Performance

Director of the Director of the Quality Assurance and University Performance Department:M.M.Aws Mahmoud Kreit

Date: 26\3\2024

Signature:

2024

Approval of the Dean

:the signature

## cription of the academic program

**This academic program provides a necessary summary of the most important characteristics of the programs and the learning outcomes that the student is expected to achieve, demonstrating whether he has achieved maximum benefit from the available opportunities. It is accompanied by a description of each course within the program**

| | |
|---|---|
| **Al-Furat Al-Awsat Technical University** | **Educational institution .1** |
| **Musayyib Technical Institute** | **Scientific .2 department/center** |
| **Name of the academic or professional program** | **Name of the academic or .3 professional program** |
| **Technical Diploma** | **Name of the final .4 certificate** |
| **Quarterly** | **:School system .5 Annual/courses/others .6** |
| **Vocabulary of the scientific curriculum approved by the Ministry and the University** | **Accredited accreditation .7 program** |
| **There is a close relationship with the labor market, which receives students and graduates, each according to his specialization** | **Other external influences .8** |
| **2024 / 2 / 10** | **Date the description was .9 prepared** |
| **Objectives of the academic program .10** | |
| **Working in the field of breeding and improving the genetic characteristics of plants and producing resistant hybrids -1** | |
| **Work in the field of cultivation and production of field crops, horticultural crops, -2** | |

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|---|
| **.ornamental plants, fruit trees, forests and shade plants** |
| **Working in the field of protected agriculture to produce seedlings, vegetable seeds, and -3 grow vegetable and strawberry plants** |
| **Working in the field of managing seed testing laboratories and estimating the -4 percentage of purity and grading it** |
| **Working in the field of plant tissue cultivation, laboratory propagation, and adoption in -5 preserving genetic assets**<br>**Working in the field of modern irrigation systems, rationing irrigation water, and -6 managing agricultural fields**<br>**Working in the field of engineering, design, planting gardens, creating green areas, and -7 landscaping cities** |

Required program outcomes and teaching, learning and evaluation methods.11

Cognitive goals-A

| | The second stage (spring semester) | T | The second stage (autumn semester) | Sequence |
|---|---|---|---|---|
| | **Decorations and garden engineering 2+2** | **1** | **3+2 Protected agriculture** | **1** |
| | **3+1 Forage and pasture crops** | **2** | **2+2 Plant breeding** | **2** |
| | **3+1 Care and storage** | **3** | **3+1 Tissue culture** | **3** |
| | **2+2 Jungles and combating them** | **4** | **2+2 Seed production** | **4** |
| | **3+1 Beekeeping** | **5** | **3+2 Production of fallen fruit** | **5** |
| | **2+2 Organic farming** | **6** | **3+1 Irrigation and salinity** | **6** |
| | **3+1 Fertility and fertilization** | **7** | **2+2 Plant diseases** | **7** |
| | **2+1 Calculator applications** | **8** | **2 Graduation research project** | **8** |
| | **2 Graduation research project** | **9** | **2+1 Calculator applications** | **9** |
| | The first stage (spring semester) | | The first stage (autumn semester) | |
| | **3+2 Summer field crops** | **1** | **3+2 Winter field crops** | **1** |
| | **3+2 Summer vegetable crops** | **2** | **3+2 Winter vegetable crops** | **2** |
| | **3+2 Sustainable fruit production** | **3** | **3+1 Forests** | **3** |
| | **3+1 Nurseries** | **4** | **2+1 Plant protection** | **4** |
| | **3+1 General insects** | **5** | **3+1 General soil** | **5** |
| | **Statistics and planning experiments 3+1** | **6** | **2+2 Pullers and agricultural machinery** | **6** |
| | **2+1 Farm management** | **7** | **2+1 animal production** | **7** |
| | **2+1 Calculator applications** | **8** | **2+1 Calculator applications** | **8** |
| | **2 democracy** | **9** | **2 human rights** | **9** |

Skills objectives of the program – b

**B**uilding and constructing greenhouses and plastic tunnels, cultivating various – 1 b
vegetable plants, and producing ornamental and potted plants

Breeding and improving plant varieties, producing hybrids and preserving breeds – 2 b

Planting fields with other crops, producing seedlings, and storing and preserving - 3 b
fruits

Adopting biological, organic and mechanical control to eliminate diseases and fungi - 4

Design and installation of sprinkler and drip irrigation systems in greenhouses and -5
greenhouses

Teaching and learning methods

Practical and theoretical lectures, laboratory, agricultural facility, scientific visits, )
(methodological field training, summer training

Evaluation methods

Oral exams, daily exams, monthly written exams, semester exams, and final exams

**.C- Emotional and value goals**

**C1- Agricultural work and production**

**C2- Establishing gardens and orchards, establishing nurseries, and propagating plants**

**C3- Controlling pests, diseases and insects**

**C4- Soil examination, land reclamation and increased fertility**

**Teaching and learning methods**

**Practical and theoretical lectures, laboratory, scientific films, agricultural facility, scientific visits, )
methodological field training, summer training**

**Evaluation methods**

**Oral exams, daily exams, monthly written exams, semester exams, and final exams**

| |
|---|
| **D - General and qualifying transferable skills (other skills related to employability and personal .development)**<br><br>**D1- Learn to drive agricultural tractors, maintain them, and plow fields**<br><br>**D2- Learn methods of raising fish, managing farms, raising animals and poultry, and establishing fields and barns**<br><br>**D3- Learn methods of systems and programs in electronic computers**<br><br>**D4- Learn ways to manage fields, increase production and reduce costs** |
| **Teaching and learning methods** |
| **Practical and theoretical lectures, laboratory, scientific films, agricultural facility, scientific visits, ) methodological field training, summer training** |
| **Evaluation methods** |
| **Oral exams, daily exams, monthly written exams, semester exams, and final exams** |

Program structure .12

| Certificates and credit hours | total summation | Hours are approved | | Name of the course or course | Course or course code | Educational level |
|---|---|---|---|---|---|---|
| | | practical | theoretical | | | |
| The technical diploma certificate for the Department of Plant Production requires credit hours | **495 = 15 × 33** | **20** | **13** | **Department of Plant Production Technologies** | | **The first stage is autumn** |
| hours 2130 | **555 = 15 × 37** | **23** | **14** | **=** | | **The first stage is spring** |
| The summer training hours | **555 = 15 ×37** | **23** | **14** | **=** | | **The second stage is** |

| | | | | | | |
|---|---|---|---|---|---|---|
| (270) will be added to it for the second stage<br>2400 = 270 + 2130<br>Total total hours with summer training | | | | | | **autumn** |
| | **525 = 15 ×35** | **23** | **12** | **=** | | **The second stage is spring** |
| | | | | | | |

Planning for personal development ..12

**Educational programs through educational supervision committees to guide students during their years of study**

Admission standard (setting regulations related to admission to the college or institute) ..13

**Average / 65%**

**Type of branch graduated from: preparatory school/scientific preparatory school and agricultural preparatory school**

With central approval

**The most important sources of information about the program ..14**

**Scientific methodological books**

**Scientific research and studies**

**The Internet**

**Scientific journals**

| Program development plan | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Please check the boxes corresponding to the individual learning outcomes from the program subject to evaluation | | | | | | | | | | | | | | | | | | | |
| **Learning outcomes required from the programme** | | | | | | | | | | | | | | | | | | | |
| **General and qualifying transferable skills (other skills related to employability and personal development)** | | | | | **Emotional and value goals** | | | | **Skills objectives of the programme** | | | | | **Cognitive objectives** | | | | **Basic Or optional** | **Course Name** | **Course Code** | **Year/level** |
| **D 5** | **D4** | **D3** | **D2** | **D1** | **C4** | **C3** | **C2** | **C1** | **B5** | **B4** | **B3** | **B2** | **B 1** | **A 4** | **A 3** | **A2** | **A1** | | | | |
| | | | | | | | | | | | | | | | | | √ | **Basic** | **Winter field crops** | | |
| | | | | | | | | √ | | | | | | | | | √ | **Basic** | **Winter vegetable crops** | | |
| | | | | | | | √ | | | | | | | | | | √ | **Basic** | **Forests** | | |
| | | | | | | √ | | | | | | | | | | | √ | **Basic** | **Plant** | | |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | protection | | | |
| | | | | | √ | | | | | | | | | | | √ | Basic | General soil | | | |
| | | | | √ | | | | | | | | | | | | √ | Basic | Agricultural pullers | | | |
| | | | √ | | | | | | | | | | | | | √ | Basic | animal production | | | |
| | | √ | | | | | | | | | | | | | | √ | Basic | Calculator applications | | | |
| | | | | | | | | | | | | √ | | | | √ | Basic | human rights | | الثانية | |
| | | | | | | | | | | | √ | | | | √ | | Basic | Protected agriculture | | | |
| | | | | | | | | | | √ | | | | | √ | | Basic | Plant breeding | | | |
| | | | | | | | | | | √ | | | | | √ | | Basic | Production of fallen fruit | | | |
| | | | | | | | | | √ | | | | | | √ | | Basic | Seed production | | | |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | √ | | | | | | | √ | | **Basic** | **Plant diseases** | | |
| | | | | | | | | | | | | | | | | √ | | **Basic** | **Irrigation and salinity** | | |
| | | | | | | | | | | | | | | | | √ | | **Basic** | **Plant tissue culture** | | |
| | | | | | | | | | | | | | | | | | √ | **Basic** | **Calculator applications** | | |
| | √ | | | | | √ | | | | | | | | | | | √ | **Basic** | **Graduation research project** | | |

**Course description form**

**Course description**

**This course description provides a summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he or she has made the most of the learning opportunities available. It must be linked to the program .description**

| | |
|---|---|
| Musayyib Technical Institute | Educational .1 institution |
| Department of Plant Production Technologies | Scientific .2 department/center |
| Protected cultivation | Course name/code .3 |
| lecture | Available forms of .4 attendance |
| Quarterly | Semester/year .5 |
| hours 75 | Number of study hours .6 (total) |
| 2024 / 2/10 | The date this .7 description was prepared |
| Course objectives .2 | |
| The student will be able to know the foundations of creating and building greenhouses -1 | |
| The student will be able to prepare and prepare houses for agriculture -2 | |
| The student will have the ability to produce seedlings and seedlings and grow them in greenhouses -3 | |
| The student must have full knowledge of the breeding, pruning and control processes of cultivated plants -4 | |
| The student must have the ability to manage the agricultural project and calculate the cost of production and marketing -5 | |

| Course outcomes and teaching, learning and evaluation methods .10 |
| --- |
| A- Cognitive objectives<br>A1- Protected agriculture |
| . B - The skills objectives of the course<br>B1 - Establishing and building greenhouses and plastic tunnels<br>B2 - Preparing and preparing houses for agriculture<br>B3 - Production of seedlings and seedlings and their cultivation in greenhouses<br>B4- Managing the agricultural project and calculating the cost of production and marketing |
| Teaching and learning methods |
| (Lecture, laboratory, methodological training, summer training) |
| Evaluation methods |
| (Oral exams, written exams, semester exams, final exams, daily evaluation) |
| C- Emotional and value goals<br>C1- Establishing greenhouses is the basic basis for protected agriculture<br>A2- Growing vegetable crops outside of their seasons, such as growing summer vegetables in the winter inside greenhouses<br>C3- Providing suitable environmental conditions for plant growth by operating heating and cooling devices<br>C4- Introducing hydroponics programs in greenhouses and producing strawberries, mushrooms, ornamental plants, and fruits |
| Teaching and learning methods |
| Practical and theoretical lectures, laboratory, scientific films, agricultural facility, ) |

| |
|---|
| (scientific visits, methodological field training, summer training |
| Evaluation methods |
| (Oral exams, written exams, semester exams, final exams, daily evaluation) |
| D - Transferable general and qualifying skills (other skills related to .employability and personal development)<br>D1- Introducing organic agriculture and organic production programs for plants grown in greenhouses<br>D2- Optimal exploitation of protected agriculture by following the summer farming system in greenhouses<br>D3- Growing leafy vegetables and legumes in greenhouses<br>D4- Production of green plants by midwives and multiplication of tree seedlings and ornamental plants |

Course structure .10

| Evaluation method | Teaching method | Name of the unit/topic | Required learning outcomes | hours | the week |
|---|---|---|---|---|---|
| **Written exam** | **lecture** | **Production in a protected environment** | **The student will be able to understand the importance of production in a protected environment** | **5= 3+2 Hour** | 1 |
| **Written exam** | **Lecture** | **Design and construction of greenhouses** | **The student will be able to know the design of greenhouses** | = | 2 |
| **Written exam** | **lecture** | **Design of basins and tunnels** | The student will be able to know the design of basins and tunnels | = | 3 |
| **Written exam** | **lecture** | **Providing environmental conditions** | The student will be able to learn about providing environmental conditions | = | 4 |
| **Written exam** | **lecture** | **Methods of controlling electronic heating and cooling devices** | The student will be able to learn about electronic heating and cooling devices | = | 5 |
| Written exam | **Lecture** | **Production of vegetable seedlings** | The student will be able to know the production of vegetable seedlings | = | 6 |
| **Evaluate my work** | The lecture is practical | **Production of ornamental seedlings** | The student will be able to learn about the production of ornamental seedlings | = | 7 |
| **Evaluate my work** | **The lecture is practical** | **Cultivation of some Solanaceae family plants** | The student will be able to know the cultivation of some plants of the Solanaceae family | = | 8 |
| **Evaluate my work** | **The lecture is practical** | **Planting some squash family plants** | The student will be able to learn about the cultivation of some plants of the Cucurbit family | = | 9 |
| **Evaluate my work** | **The lecture is practical** | **Summer farming system** | The student will be able to know the summer farming system | = | 10 |
| **Evaluate my** | **The lecture** | **Cultivation of various types of** | The student will be able to know the different types of | = | 11 |

| | | | | | |
|---|---|---|---|---|---|
| **work** | **is practical** | **mushrooms** | mushroom cultivation | | |
| **Evaluate my work** | **The lecture is practical** | **Growing strawberry plants** | The student will be able to learn about growing strawberry plants | = | 12 |
| Evaluate my work | **The lecture is practical** | **Hydroponics system** | The student will be able to learn about the hydroponic system | = | 13 |
| **Written exam** | Lecture | **Organic farming system** | The student will be able to know the organic farming system | = | 14 |
| Written exam | **lecture** | **Overlapping and vertical farming system** | The student will be able to know the staggered and vertical farming system | = | 15 |

| Infrastructure .10 .10 | |
|---|---|
| Required prescribed books -1 | Required prescribed books -1 |
| Main references (sources) -2 | Main references (sources) -2 |
| Recommended books and references (scientific journals, reports,...) | Recommended books and references (scientific journals, reports,...) |
| ...B - Electronic references, Internet sites | B - Electronic references, Internet ...sites |

Course evaluation .11
By distributing the grade out of 100 according to the tasks assigned to the student, .such as daily preparation, daily, oral, monthly, written exams, reports...etc

| | |
|---|---|
| √ | Learning and teaching resources .13<br>Methodological textbooks, if any |
| √ | Main references..sources |
| | Recommended supporting books and references, scientific journals, and reports |
| √ | Electronic references, Internet sites |

## Course description form

## Course description

**This course description provides a necessary summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the available learning .opportunities, which must be linked to the program class**

| | |
|---|---|
| Musayyib Technical Institute | 1. Educational institution .1 |
| Department of Plant Production Technologies | Scientific department/center |
| Tissue culture and plant cells / T.C & Plant Cell | Course name/code |
| lecture | Available attendance forms |
| Fall semester/second stage | Semester/year |
| 60 in theoretical and practical semester 60 | Number of study hours (total) |
| 2024/2/ | Date this description was prepared |
| Course objectives .8 | |
| Granting the student a diploma in the theoretical and practical aspects in order to prepare a graduate of a prestigious level and a position in the work arena | |
| | |
| | |
| | |
| Rapporteur name: Intisar Abdullah Toman | |

Teaching, learning and assessment strategies

A- Cognitive objectives

A1- Teaching students the importance of plant tissue culture

Introducing students to the role of growth regulators in cell division and -2 differentiation in tissue culture

Enabling the student to know how to deal with laboratory materials and -3 equipment

.B - The skills objectives of the course

B1 - Providing the student with the skills of propagating plants tissue

Training the student on manufacturing agricultural media and propagating -2 .plants tissue to reach high productivity

Providing the student with the necessary skills to conduct laboratory tests -3 .related to tissue culture and how to give appropriate scientific judgments

Teaching and learning methods

Giving scientific and theoretical lectures through presentation screens, PowerPoint, slides, microscopes, experiments examining plant samples, using .various laboratory devices and equipment, and a wooden canopy

Evaluation methods

(Oral exams, written exams, semester exams, final exams, daily evaluation)

C- Emotional and value goals

.C1- Enabling the student to apply theoretical information in a practical way

Developing the student's national spirit to increase production in quantity and -2 .quality

Instilling the concept of community service and the ideal way to deal with the -3 .simple segments of society, the peasants and farmers

Developing the ethics of the agricultural engineer profession among students -4 .by following correct professional behavior

| Teaching and learning methods |
| --- |
| **Practical and theoretical lectures, laboratory, scientific films, agricultural facility, scientific visits, ) (methodological field training, summer training** |

| Evaluation methods |
| --- |
| (Oral exams, written exams, semester exams, final exams, daily evaluation) |

| D - Transferable general and qualifying skills (other skills related to employability .and personal development) |
| --- |
| D1- Introduction of programs |

Course structure .10 .10

| Evaluation method | Teaching method | Name of the unit/topic | Required learning outcomes | hours | the week |
|---|---|---|---|---|---|
| Written exam | lecture And a practical lesson | Common terms in the subject of plant cell and tissue culture - apical meristem - callus - cell solution - nutrient medium - protoplast - cellular differentiation - cell fusion - anther cultivation - cell preservation by freezing | Cognitive And my skills | 4= 3+1 hour | 1 |
| Written exam | lecture | The importance of plant cell and tissue transplantation in increasing agricultural production | Cognitive And my skills | = | 2 |
| Written exam | lecture | The role of growth regulators in cell division and differentiation | Cognitive And my skills | = | 3 |
| Written exam | Lecture | The importance of tissue culture in plant (1) breeding and improvement | Cognitive And my skills | = | 4 |
| Written exam | Lecture | The importance of tissue culture in plant (2) breeding and improvement | Cognitive And my skills | = | 5 |
| Written exam | Lecture | The importance of tissue culture in the (1) production of medical drugs | Cognitive And my skills | = | 6 |
| Evaluate my work | lecture | The importance of tissue culture in the (2) production of medical drugs | Cognitive And my skills | = | 7 |
| Evaluate my work | practical | Cultivation of roots with plant tissue | Cognitive And my skills | = | 8 |
| Evaluate my work | lecture | Cultivation and production of callus | Cognitive And my skills | = | 9 |

| | | | | | |
|---|---|---|---|---|---|
| Evaluate my work | practical | **Production and growth of cell suspension** | **Cognitive And my skills** | = | 10 |
| Evaluate my work | lecture | **Preserving plant tissues by freezing** | **Cognitive And my skills** | = | 11 |
| **Listen and ask questions** | **Lecture practical** | **Producing virus-free plants** | **Cognitive And my skills** | = | 12 |
| **Evaluate my work** | **lecture practical** | **The use of root knot bacteria in tissue culture** | **Cognitive And my skills** | = | 13 |
| **Written exam** | **lecture** | **Growth measurements of transplanted organs and tissues** | **Cognitive And my skills** | = | 14 |
| **Evaluate my work** | **lecture practical** | **Preparing agricultural environments** | **Cognitive And my skills** | = | 15 |

| Decision structure .14 | |
|---|---|
| Protected agriculture methodological book, educational package for the course | 1- Required prescribed books |
| Methodological books taught in corresponding colleges and universities | 2- Main references (sources) |
| Foreign and Arab references related to tissue culture | Recommended books and references (scientific journals, reports,...) |
| Searching websites in agricultural sciences | B - Electronic references, Internet sites... |

Course evaluation .14

By distributing the grade out of 100 according to the tasks assigned to the student, .such as daily preparation, daily, oral, monthly, written exams, reports...etc

| |
|---|
| Learning and teaching resources.13<br>Methodological textbooks, if any<br>Main references..sources<br>Recommended supporting books and references, scientific journals, and reports<br>Electronic references, Internet sites |
| |

## Course description form

## Course description

This course description provides a necessary summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he or she has made the most of the learning .opportunities available. It must be linked to the program description

| | |
|---|---|
| Musayyib Technical Institute | 1- Educational institution |
| Department of Plant Production Technologies | 2- Scientific Department/Center |
| Winter vegetable crops | 3- Course name/code |
| My presence | 4- Available forms of attendance |
| Fall semester - first stage | 5- Semester/year |
| 75 hours in theory and practical semester | 1- Number of study hours (total) |
| 2/28/2024 | 7. The date this description was prepared |
| Course objectives .8 | |
| Granting the student a diploma in the theoretical and practical aspects in order | |

| |
|---|
| to prepare a graduate of a distinguished level and put him into the practical arena |
| |
| |
| |
| |
| |
| Course Name |
| M. Dr.. Marwa Hassan Jarallah |
| |

| Teaching, learning and evaluation strategies -9 |
|---|
| A- Cognitive objectives<br><br>A1- Teaching students how to deal with winter vegetable crops so that they have modern scientific specifications, methods of managing them, and factors affecting .their productivity<br><br>A2- Introducing students to how to develop winter vegetable crops so that they .are able to characterize and serve them in their various types<br><br>A3- Enabling the student to know how to deal with laboratory materials and .equipment |
| .B - The skills objectives of the course<br><br>B1 - Providing the student with the skills of applying scientific methods regarding .the management of winter vegetable crops<br><br>B2- Training the student on the production of winter vegetable crops to achieve .high productivity<br><br>B3- Providing the student with the necessary skills to conduct laboratory tests -G.related to vegetables and soil and how to give appropriate scientific judgments<br><br>Emotional and value goals<br><br>.C1- Enabling the student to apply theoretical information in a practical way<br><br>C2- Developing the student's national spirit to increase production in quantity |

.and quality

C3- Instilling the concept of community service and the best way to deal with .simple segments of society such as peasants and farmers

D - Transferable general and qualifying skills (other skills related to .employability and personal development)

D1- Introduction of programs

## Teaching and learning methods -10

(Lecture, laboratory, methodological training, summer training)

Giving theoretical and practical lectures through presentation screens, PowerPoint, slides, microscopes, experiments examining plant samples, using .various laboratory devices and equipment, and a wooden canopy

## Evaluation methods -11

(Oral exams, written exams, semester exams, final exams, daily evaluation)

.Conducting quick daily exams (Quize) -

.Conducting monthly examinations -

.Conducting semester and final exams - -

## Course structure -12

| Evaluation method | Teaching method | Required learning outcomes | Required learning outcomes | hours | the week |
|---|---|---|---|---|---|
| **questions and answers** | **Lecture and practical lesson** | **Vegetable science – economic and nutritional importance** | **My knowledge and skills** | **5= 3+2 hour** | 1 |
| **Written exam** | Lecture and practical | **Geographical distribution in Iraq and the Arab world - problems of vegetable production and** | **My knowledge** | **5= 3+2 hour** | |

| | | | | | |
|---|---|---|---|---|---|
| | lesson | **proposed solutions** | **and skills** | | |
| **Ask questions** | Lecture and practical lesson | **Methods of dividing vegetables - vegetative division - according to the growth cycle - according to the part used for consumption - thermal division - division according to the method of cultivation - areas of growth of vegetables** | My knowledge and skills | **5= 3+2 hour** | 2 |
| **Listen and ask questions** | Lecture and practical lesson | **The effect of environmental factors on the growth and development of vegetables - climate factors - soil factors** | My knowledge and skills | **5= 3+2 hour** | 3 |
| Practical exercise, meeting and work groups | Lecture and practical lesson | **Vegetable crop reproduction - sexual reproduction - asexual reproduction - characteristics of good seeds - germination - dormancy - seed treatments** | My knowledge and skills | **5= 3+2 hour** | 4 |
| Practical exercise, meeting and work groups | Lecture and practical lesson | **Production of vegetable seedlings - definition of the nursery, advantages and disadvantages of the nursery - causes of differences in seedling tolerance - agricultural media - definition of acclimatization - physiological changes of acclimatization** | My knowledge and skills | **5= 3+2 hour** | 5 |
| **Mini lesson discussing practical exercise and work groups** | Lecture and practical lesson | **Production of the Lahana crop - the original habitat and the importance of the Lahana - suitable climate and soil - reproduction - date and method of cultivation - service process** | My knowledge and skills | **5= 3+2 hour** | 6 |
| **Case study, practical exercise and work groups** | Lecture and practical lesson | **Cauliflower crop production - the original habitat and importance of cauliflower - suitable climate and soil - reproduction - date and method of cultivation - service process** | My knowledge and skills | **5= 3+2 hour** | 7 |
| **Listening and asking practical exercise questions and work groups** | Lecture and practical lesson | **Production of radish, ragweed, and cress crops - location and importance of the crop - climate and suitable soil - reproduction - date and method of cultivation - service process** | My knowledge and skills | **5= 3+2 hour** | 8 |
| **Asking listening questions, practical exercises and** | Lecture and practical lesson | **Production of the crop of beans - peas - fenugreek - the original habitat and importance of the crop - climate and suitable soil - reproduction - date and method of cultivation - service process** | My knowledge and skills | **5= 3+2 hour** | 9 |

| | | | | | |
|---|---|---|---|---|---|
| **work groups** | | | | | |
| **Asking group questions** | Lecture and practical lesson | **Onion crop production - the original habitat and importance of the crop - suitable climate and soil - reproduction - date and method of planting - service process - early flowering in onions - duplication in onions - production of green onions** | My knowledge and skills | **5= 3+2 hour** | 10 |
| **Mini lesson work groups** | Lecture and practical lesson | **Production of garlic and leeks - the original habitat and importance of the crop - suitable climate and soil - reproduction - date and method of cultivation - service process** | My knowledge and skills | **5= 3+2 hour** | 11 |
| **Practical exercise and work groups** | Lecture and practical lesson | **Production of Swiss chard - beets - spinach - the original habitat and importance of the crop - climate and suitable soil - reproduction - date and method of cultivation - service process – flowers** | My knowledge and skills | **5= 3+2 hour** | 12 |
| **Asking questions** | Lecture and practical lesson | **Production of carrots and lettuce - the original habitat and importance of the crop - suitable climate and soil - reproduction - date and method of cultivation - service process - flowering in lettuce** | My knowledge and skills | **5= 3+2 hour** | 13 |
| Asking practical exercise questions | Lecture and practical lesson | **Production of celery - mint - dill - the original habitat and importance of the crop - climate and suitable soil - reproduction - date and method of cultivation - service process** | My knowledge and skills | **5= 3+2 hour** | 14 |
| Asking practical exercise questions | Lecture and practical lesson | **Production of vegetables hoped to be grown in Iraq Broccoli - Lahana Brussels - Watercress - Dandelion - Onions Wales - Chef - Importance and original habitat - Date and method of cultivation - Service operations** | My knowledge and skills | **5= 3+2 hour** | 15 |

| Course development plan -13 |
|---|
| Providing the possibility of academic support in organizing field visits -<br>Providing an appropriate classroom environment that enables the teacher to diversify -<br>teaching strategies<br>Providing information technology in the campus library -<br>Hosting experts from outside the institute or from the work environment for which they -<br>are preparing to benefit from their expertise in developing the course according to the<br>.actual need of the labor market |

| Infrastructure -14 | |
|---|---|
| Methodical book on winter vegetable crops | 1- Required prescribed books |
| Supporting sources for each course | 2- Main references (sources) |
| Scientific journals, as well as research, theses and dissertations by professors in the same specialty | Recommended books and references (scientific journals, reports,...) |
| location www.google.com | B - Electronic references, Internet sites... |

| Course evaluation -15<br>By distributing the grade out of 100 according to the tasks assigned to the student, .such as daily preparation, daily, oral, monthly, written exams, reports...etc |
|---|

| Learning and teaching resources16<br>Methodological textbooks, if any<br>Main references..sources<br>Recommended supporting books and references, scientific journals, and reports<br>Electronic references, Internet sites |
|---|

## Course description form

## Course description

This course description provides a necessary summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he or she has made the most of the learning .opportunities available. It must be linked to the program description

| Musayyib Technical Institute | 1- Educational institution |
|---|---|
| Department of Plant Production Technologies | 2- Scientific Department/Center |

| | |
|---|---|
| Nurseries and forests / Nurseries and Forestries | 3- Course name/code |
| My presence | 4- Available forms of attendance |
| Fall semester - first stage | 5- Semester/year |
| 60 hours in theory and practical semester | 6- Number of study hours (total) |
| 2/28/2024 | 7. The date this description was prepared |

Course objectives .8

Granting the student a diploma in the theoretical and practical aspects in order to prepare a graduate of a distinguished level and put him into the practical arena

Course Name

M. Dr.. Marwa Hassan Jarallah

Teaching, learning and evaluation strategies -9

A- Cognitive objectives

A1- Teaching students how to deal with nurseries and forests so that they have modern scientific specifications, methods of managing them, and factors affecting their productivity.

A2- Introducing students to how to develop nurseries and forests so that they are able to describe and serve them of various types.

A3- Enabling the student to know how to deal with laboratory materials and equipment.

.B - The skills objectives of the course

B1 - Providing the student with the skills of applying scientific methods regarding .the management of winter vegetable crops

B2- Training the student on the production of winter vegetable crops to achieve .high productivity

B3- Providing the student with the necessary skills to conduct laboratory tests -C.related to vegetables and soil and how to give appropriate scientific judgments Emotional and value goals

C1- The student will acquire skills in applying valuable scientific methods related to the management of nurseries and forests, so that he will be able to .propagate them using modern methods, such as plant tissue culture

C2- Training the student on nursery and forest production to achieve high .productivity

C3- Providing the student with the necessary skills to conduct laboratory tests related to nurseries, forests, and soil, and how to give appropriate scientific .judgments

Teaching and learning methods -10

Giving theoretical and practical lectures through presentation screens, PowerPoint, slides, microscopes, experiments examining plant samples, using .various laboratory devices and equipment, and a wooden canopy

Evaluation methods -11

.Conducting quick daily exams (Quize) -

.Conducting monthly examinations -

.Conducting semester and final exams -

Course structure -12

| Evaluation method | Teaching metho | Name of the unit/topic | Required learning | hours | the week |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| | **d** | | **outcomes** | | |
| أسئلة واجوبة | Lecture and practical lesson | **Nurseries - The importance of nurseries - Types of nurseries - Test** | My knowledge and skills | **4= 3+1 hour** | 1 |
| **Questions and answers practical lesson** | Lecture and practical lesson | **Nursery location - preparation and planning - some definitions such as seedlings, trees, shrubs, forests and silviculture** | My knowledge and skills | **4= 3+1 hour** | |
| Ask questions | Lecture and practical lesson | **Plant propagation - sexual and asexual reproduction - advantages and disadvantages of the two methods** | My knowledge and skills | **4= 3+1 hour** | 2 |
| Listen and ask questions | Lecture and practical lesson | **Propagation by seeds - germination requirements - seed viability - environmental and internal factors - methods of planting seeds - methods of planting in a permanent place - agricultural settings** | My knowledge and skills | **4= 3+1 hour** | 3 |
| Practical exercise, meeting and work groups | Lecture and practical lesson | **Methods of vegetative propagation - propagation by cuttings - types of cuttings - types of stem cuttings - origin of cuttings in hardwood cuttings - factors affecting root formation** | My knowledge and skills | **4= 3+1 hour** | 4 |
| Practical exercise, meeting and work groups | Lecture and practical lesson | **Auxins Types of auxins - Methods of Auxins used in stem cuttings - Kayering - Types of layers - Types of earth layers - Air layers - Light - Forms of light - Transporters - Plants .and transport mechanisms** | My knowledge and skills | **4= 3+1 hour** | 5 |
| **Mini lesson discussing practical exercise and work groups** | Lecture and practical lesson | Training - the goal of the skill and training - parts of the plant - the framework - training methods. | My knowledge and skills | **4= 3+1 hour** | 6 |
| **Case study, practical exercise and work groups** | Lecture and practical lesson | Central classes - modified center - open center - modern methods. | My knowledge and skills | **4= 3+1 hour** | 7 |
| **Listening and asking practical** | Lecture and practical | Tissue culture - micropropagation stages - selection of plant part - sterilization of explants - establishment stage - nutrient medium - multiplication stage - rooting stage - | My knowledge and | **4= 3+1 hour** | 8 |

| | | | | | |
|---|---|---|---|---|---|
| **exercise questions and work groups** | lesson | acclimatization stage. | skills | | |
| **Asking listening questions, practical exercises and work groups** | Lecture and practical lesson | Forest - Introduction - Characteristics of trees - Distribution of forest in a word - Tropical and subtropical forests - Temperate - Cold zone forests - Temperate - Warm zone forests - Gallery forests and Namboo forests | My knowledge and skills | **4= 3+1 hour** | 9 |
| **Asking group questions** | Lecture and practical lesson | Forests in Iraq - natural forests - by density - open forests - medium density forests - dense forests - by types - oak forests - pine forests - riverine forests - artificial forests. | My knowledge and skills | **4= 3+1 hour** | 10 |
| **Mini lesson work groups** | Lecture and practical lesson | A scientific visit to one of the forest ranges. | My knowledge and skills | **4= 3+1 hour** | 11 |
| **Practical exercise and work groups** | Lecture and practical lesson | Forest advantages - production advantages - protection advantages - replication advantages. | My knowledge and skills | **4= 3+1 hour** | 12 |
| **Asking questions** | Lecture and practical lesson | Primary advantages - wood - rubber - waste papers... etc. Secondary advantages - bark - suberin production - insulation - for nutrition - alcoholic - aromatic production - perfumes - medicines - soap extraction - gums - rain and glue. | My knowledge and skills | **4= 3+1 hour** | 13 |
| **Asking practical exercise questions** | Lecture and practical lesson | Vegetation - forests - maquis - tundra - savannah - steppe - desert - tree growth stages - seedling stage - seedling stage - column stage - young woody stage - maturity stage. | My knowledge and skills | **4= 3+1 hour** | 14 |
| **القاء اسئلة تمرين عملي** | Lecture and practical lesson | Pure Foresta caracterics of pure forest - Natural conditions for forming a pure forest - Mixed forest - Equivalence of the mix - Mix rules - Creating a mixed forest - Cayer's rule - Mix shapes - Equal mix - Linear mix - Strip mix - Mix groups. | My knowledge and skills | **4= 3+1 hour** | 15 |

| Course development plan -13 |
|---|
| Providing the possibility of academic support in organizing field visits -<br>Providing an appropriate classroom environment that enables the teacher to diversify -<br>teaching strategies<br>Providing information technology in the campus library - |

| |
|---|
| Hosting experts from outside the institute or from the work environment for which they are preparing to benefit from their expertise in developing the course according to the actual need of the labor market - . |

| Infrastructure -14 | |
|---|---|
| The methodological book for nurseries and forests | 1- Required prescribed books |
| Supporting sources for each course | 2- Main references (sources) |
| Scientific journals, as well as research, theses and dissertations by professors in the same specialty | Recommended books and references (scientific journals, reports,...) |
| www.google.com website | B - Electronic references, Internet sites... |

| |
|---|
| Course evaluation -15<br>By distributing the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports...etc. |

| |
|---|
| Learning and teaching resources-16<br>Methodological textbooks, if any<br>Main references..sources<br>Recommended supporting books and references, scientific journals, and reports<br>Electronic references, Internet sites |

## Course description form

## Course description

| |
|---|
| This course description provides a necessary summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he or she has made the most of the learning opportunities available. It must be linked to the program description. |

| | |
|---|---|
| Musayyib Technical Institute | 1- Educational institution |
| Department of Plant Production Technologies | 2- Scientific Department/Center |
| Plant breeding and improvement | 3- Course name/code |
| My presence | 4- Available forms of attendance |
| Fall semester - second stage | 5- Semester/year |
| 60 hours in theory and practical semester | 6- Number of study hours (total) |
| 2/28/2024 | 7. The date this description was prepared |

Course objectives .8

Granting the student a diploma in the theoretical and practical aspects in order to prepare a graduate of a distinguished level and put him into the practical arena

Course Name

M. Dr.. Marwa Hassan Jarallah

Teaching, learning and evaluation strategies -9

A- Cognitive objectives

A1- Teaching students how to choose the best method of reproduction and .cultivation for each crop

A2- Introducing students to how to develop service operations during the growing seasons so that they are able to describe them and their various types of .services

A3- Enabling the student to know how to deal with laboratory materials and

.equipment

.B - The skills objectives of the course

B1 - Providing the student with the skills of applying scientific methods regarding .plant breeding

B2- Training the student to produce crops using appropriate breeding methods to .achieve high productivity

B3- Providing the student with the necessary skills to conduct laboratory tests -C.related to plants and soil and how to give appropriate scientific judgments

Emotional and value goals

.C1- Enabling the student to apply theoretical information in a practical way

C2- Developing the student's national spirit to increase production in quantity .and quality

C3- Instilling the concept of community service and the best way to deal with .simple segments of society such as peasants and farmers

C4- Developing the ethics of the agricultural engineer profession among .students by following correct professional behavior

D - Transferable general and qualifying skills (other skills related to .employability and personal development)

D1- Introduction of programs

Teaching and learning methods -10

Giving theoretical and practical lectures through presentation screens, PowerPoint, slides, microscopes, experiments examining plant samples, using .various laboratory devices and equipment, and a wooden canopy

Evaluation methods -11

.Conducting quick daily exams (Quize) -

.Conducting monthly examinations -

.Conducting semester and final exams -

Course structure -12

| Evaluation method | Teaching method | Name of the unit/topic | Required learning outcomes | hours | the week |
|---|---|---|---|---|---|
| questions and answers | Lecture and practical lesson | Introduction - The development of plant breeding and improvement | My knowledge and skills | 4= 2+2 hour | 1 |
| Practical mini-lesson | Lecture and practical lesson | | My knowledge and skills | 4= 2+2 hour | |
| Ask questions | Lecture and practical lesson | Objectives of plant breeding and improvement - improving production - improving quality - breeding for disease resistance - breeding for special traits. | My knowledge and skills | 4= 2+2 hour | 2 |
| Listen and ask questions | Lecture and practical lesson | Plant cell - its components - nucleus - chromosomes. | My knowledge and skills | 4= 2+2 hour | 3 |
| Practical exercise, meeting and work groups | Lecture and practical lesson | Types of cell division - normal division - meiosis. - double fertilization | My knowledge and skills | 4= 2+2 hour | 4 |
| Practical exercise, meeting and work groups | Lecture and practical lesson | Pollination in plants - self-pollination and its importance - cross-pollination and its importance. | My knowledge and skills | 4= 2+2 hour | 5 |
| Mini lesson discussing practical exercise and work groups | Lecture and practical lesson | Mendel's laws in plant breeding and genetics - the first law - the law of isolation - the second law. - the law of free distribution | My knowledge and skills | 4= 2+2 hour | 6 |
| Case study, practical exercise and | Lecture and practical | Genetic changes - their importance - their origin. - their introduction | My knowledge and | 4= 2+2 hour | 7 |

| | | | | | |
|---|---|---|---|---|---|
| **work groups** | lesson | | skills | | |
| **Listening and asking practical exercise questions and work groups** | Lecture and practical lesson | **Qualitative traits and their relationship to genetic factors - Quantitative traits and their .relationship to genetic factors** | My knowledge and skills | **4= 2+2 hour** | 8 |
| **Asking listening questions, practical exercises and work groups** | Lecture and practical lesson | **The relationship between the inheritance of traits and environmental conditions - the interaction between genetics and environment in breeding and plant improvement** | My knowledge and skills | **4= 2+2 hour** | 9 |
| **Asking group questions** | Lecture and practical lesson | **Methods of plant breeding and improvement - method of saving from similar environments - .acclimatization - evaluation** | My knowledge and skills | **4= 2+2 hour** | 10 |
| **Mini lesson work groups** | Lecture and practical lesson | **Selection methods - individual selection - .quantitative selection - group selection** | My knowledge and skills | **4= 2+2 hour** | 11 |
| **Practical exercise and work groups** | Lecture and practical lesson | **Hybridization method - single hybridization - pair hybridization - multiple hybridization** | My knowledge and skills | **4= 2+2 hour** | 12 |
| **Asking questions** | Lecture and practical lesson | **Creating genetic mutations - physical .mutagens - chemical mutagens** | My knowledge and skills | **4= 2+2 hour** | 13 |
| **Asking practical exercise questions** | Lecture and practical lesson | **Genetics and development of varieties resistant to plant diseases** | My knowledge and skills | **4= 2+2 hour** | 14 |
| **Asking practical exercise questions** | Lecture and practical lesson | **Introducing cytoplasmic sterility - its importance - its use in plant breeding** | **My knowledge and skills** | **4= 2+2 hour** | 15 |

Course development plan -13

Providing the possibility of academic support in organizing field visits -
Providing an appropriate classroom environment that enables the teacher to diversify - teaching strategies
Providing information technology in the campus library -
Hosting experts from outside the institute or from the work environment for which they - are preparing to benefit from their expertise in developing the course according to the .actual need of the labor market

| Infrastructure -14 | |
|---|---|
| Systematic book on plant breeding and improvement | 1- Required prescribed books |
| Supporting sources for each course | 2- Main references (sources) |
| Scientific journals, as well as research, theses and dissertations by professors in the same specialty | Recommended books and references (scientific journals, reports,...) |
| www.google.com website | B - Electronic references, Internet sites... |

Course evaluation -15 -
By distributing the grade out of 100 according to the tasks assigned to the student, .such as daily preparation, daily, oral, monthly, written exams, reports...etc

Learning and teaching resources16
Methodological textbooks, if any
Main references..sources
Recommended supporting books and references, scientific journals, and reports
Electronic references, Internet sites

# Course description form

## Course description

**This course description provides a necessary summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the available learning .opportunities. They must be linked to the program description**

| | |
|---|---|
| Musayyib Technical Institute | 1. Educational institution |
| Department of Plant Production Technologies | 2. Scientific department/center |
| Winter field crops | 3. Course name/code |
| My presence | 4. Available forms of attendance |
| Semester/fall first stage | 5. Semester/year |
| 75 hours per semester, theoretical and practical | 6. Number of study hours (total) |
| 2/28/2024 | 7. The date this description was prepared |
| | |

| |
|---|
| Objectives of the course: Granting the student a diploma in the theoretical and practical aspects in order to serve the preparation of a graduate of a distinguished level and place him in the scientific arena. 8 |
| -1 |
| -2 |
| -3 |
| -4 |
| |
| Name of the course administrator: 8 |
| |
| |

Teaching, learning and assessment strategies

A- Cognitive objectives

A1- Teaching students how to deal with winter field crops so that they have modern scientific specifications, methods of managing them, and factors .affecting their productivity

A2- Introducing students to how to develop winter field crops so that they are .able to characterize and serve them in various types

A3- Enabling the student to know how to deal with laboratory equipment and .materials

B - The skills objectives of the course.

B1 - Providing the student with the skills of applying scientific methods .regarding winter crop management

B2- Training the student on the production of winter field crops to achieve high .productivity

B3- Providing the student with the necessary skills to conduct laboratory tests ..related to crops and soil and how to give appropriate scientific judgments

Teaching and learning methods

(Lecture, laboratory, methodological training, summer training)

Giving scientific and theoretical lectures through presentation screens, PowerPoint, slides, microscopes, experiments examining plant samples, using .various laboratory devices and equipment, and a wooden canopy

Evaluation methods

(Oral exams, written exams, semester exams, final exams, daily evaluation)

C- Emotional and value goals

.C1- Enabling the student to apply theoretical information in a practical way

C2- Developing the student's national spirit to increase production in quantity and .quality

C3- Instilling the concept of community service and the best way to deal with .simple segments of the peasant and farmer community

C4- Developing the ethics of the profession of agricultural engineer among .students by following correct professional behavior

Teaching and learning methods

(Practical and theoretical lectures, laboratory, scientific films, agricultural facility, scientific visits, methodological field training, summer training)

Evaluation methods

(Oral exams, written exams, semester exams, final exams, daily evaluation)

D - Transferable general and qualifying skills (other skills related to .employability and personal development)

D1- Introduction of programs

Course structure .10

| Evaluation method | Teaching method | Name of the unit/topic | Required learning outcomes | hours | Week |
|---|---|---|---|---|---|
| Written exam | lecture | The economic importance of winter field crops | My knowledge and skills | 5= 3+2 hour | 1 |
| Written exam | lecture | Problems of winter crop production, dividing winter crops according to planting season and use. | My knowledge and skills | = | 2 |
| Written exam | lecture | The process of preparing and preparing the land for agriculture (the importance of conducting it, types of plows used, smoothing and leveling, used machines) | My knowledge and skills | = | 3 |
| Written exam | lecture | Methods of growing and serving crops (prose, lines, pages, advantages and disadvantages of each method) | My knowledge and skills | = | 4 |
| Written exam | lecture | Wheat crop production, economic importance, suitable environmental conditions, planting date, quantity of seeds, fertilization, irrigation, stages of growth, maturity and harvest. | My knowledge and skills | = | 5 |
| Written exam | lecture | The composition of the wheat grain, the stages of grain maturity, the type of seed, the difference between fine and coarse wheat, and the steps for producing wheat flour. | My knowledge and skills | = | 6 |
| Evaluate my work | المحاضرة عملية | Barley crop production, economic importance, suitable environmental conditions, planting date, planting method, seed quantity, fertilization, irrigation, stages of growth, maturity and harvest. | My knowledge and skills | = | 7 |
| Evaluate my work | The lecture is practical | Rye crop production, economic importance, origin, suitable environmental conditions, planting date, method of planting, seeding and fertilizing, irrigation, stages of maturity and harvest, preparing seeds for storage and manufacturing. | My knowledge and skills | = | 8 |
| Evaluate my work | The lecture is practical | Rye wheat production, economic importance, environmental conditions, planting date, planting method, seed quantity, fertilization, irrigation, crop growth stages. | My knowledge and skills | = | 9 |

| | | | | | |
|---|---|---|---|---|---|
| Evaluate my work | The lecture is practical | Production of sugar beets and sugar cane, economic importance, environmental conditions, planting date, planting method, quantity of seeds, fertilization, irrigation, stages of crop growth, maturity, harvesting and harvesting. | My knowledge and skills | = | 10 |
| Evaluate my work | The lecture is practical | Qualitative characteristics of cane and beets and stages of sugar production. | My knowledge and skills | = | 11 |
| Evaluate my work | The lecture is practical | Bean crop production, economic importance, planting date, planting method, quantity of seeds, fertilization, irrigation, maturity and harvest | My knowledge and skills | = | 12 |
| Evaluate my work | The lecture is practical | Chickpea and lentil production, economic importance, environmental conditions, planting date, planting method, seed quantity, fertilization, irrigation. | My knowledge and skills | = | 13 |
| Written exam | lecture | Flax and safflower production, economic importance, environmental conditions, planting date, planting method, fertilization, irrigation, seed quantity. | My knowledge and skills | = | 14 |
| Written exam | lecture | Agricultural cycles for winter crops, definition of agricultural cycles, types of cycles, how to design agricultural cycles, giving various examples. | My knowledge and skills | = | 15 |

| Decision structure .10 | |
|---|---|
| Protected agriculture methodological book, educational package for the course | 1- Required prescribed books |
| Methodological books taught in corresponding colleges and universities | 2- Main references (sources) |
| Foreign and Arab references for winter field crops | Recommended books and references (scientific journals, reports,...) |
| Searching websites in agricultural sciences | B - Electronic references, Internet sites... |

| |
|---|
| Course evaluation .10<br>By distributing the grade out of 100 according to the tasks assigned to the student, .such as daily preparation, daily, oral, monthly, written exams, reports...etc |

| |
|---|
| Learning and teaching resources .13<br>Methodological textbooks, if any<br>Main references..sources<br>Recommended supporting books and references, scientific journals, and reports<br>Electronic references, Internet sites |
| |

## Course description form

### Course description

**This course description provides a necessary summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the available learning .opportunities. They must be linked to the program description**

| | |
|---|---|
| Musayyib Technical Institute | 1. Educational institution .2 |
| Department of Plant Production Technologies | 2. Scientific department/center .3 |
| Pullers and agricultural machines / Agriculture machines equipment's | 3. Course name/code .4 |
| My presence | 4. Available forms of attendance .5 |
| Semester/fall, first stage | 5. Semester/year .6 |

| | |
|---|---|
| hours per semester, theoretical and practical 75 | .7 Number of study hours (total) |
| 2024 / 2/28 | .7 The date this description was prepared |
| | |
| .8 Objectives of the course: Granting the student a diploma in the theoretical and practical aspects in order to serve the preparation of a graduate of a distinguished level and place him in the scientific arena. | |
| -5 | |
| -6 | |
| -7 | |
| -8 | |
| | |
| .8 Name of the course officer: M.M. Meena | |
| | |
| | |
| | |

| |
|---|
| Teaching, learning and assessment strategies |
| A- Cognitive objectives<br><br>A1- Teaching students to understand the agricultural tug and training in its use in the field.<br><br>A2- Introducing students to the main parts of the tug, their importance, and how each part works.<br><br>A3- Enabling the student to know how to deal with the equipment and materials in the tug. |
| .B - The skills objectives of the course<br><br>.B1 - Providing the student with tug maintenance skills<br><br>B2- Training the student to understand the operation of the tug systems and identify faults to achieve high productivity.<br><br>B3- Providing the student with the necessary skills to conduct general examinations related to the soil and soil and how to give appropriate scientific |

.judgments

Teaching and learning methods

(Lecture, laboratory, methodological training, summer training)

Giving scientific and theoretical lectures through presentation screens, PowerPoint, slides, microscopes, experiments examining plant samples, using .various laboratory devices and equipment, and a wooden canopy

Evaluation methods

(Oral exams, written exams, semester exams, final exams, daily evaluation)

C- Emotional and value goals

.C1- Enabling the student to apply theoretical information in a practical way

C2- Developing the student's national spirit to increase production in quantity and .quality

C3- Instilling the concept of community service and the best way to deal with .simple segments of the peasant and farmer community

C4- Developing the ethics of the profession of agricultural engineer among .students by following correct professional behavior

Teaching and learning methods

**Practical and theoretical lectures, laboratory, scientific films, agricultural facility, scientific visits, ) (methodological field training, summer training**

Evaluation methods

(Oral exams, written exams, semester exams, final exams, daily evaluation)

D - Transferable general and qualifying skills (other skills related to employability .and personal development)

D1- Introduction of programs

Course structure .10

| Evaluation method | Teaching method | Name of the unit/topic | Required learning outcomes | hours | the week |
|---|---|---|---|---|---|
| Written exam | Lecture | Knowing the importance of agricultural mechanization - types of tractors - public safety. | My knowledge and skills | 5= 3+2 hour | 1 |
| Written exam | Lecture | Study the main parts of the tug and the function of each part - transmission devices, their parts and function. | My knowledge and skills | = | 2 |
| Written exam | Lecture | Study of the tug system (fuel and cooling system, parts and importance), malfunctions and maintenance. | My knowledge and skills | = | 3 |
| Written exam | Lecture | Study of the lubrication system - air purification system - exhaust and silencer system - their parts and function. | My knowledge and skills | = | 4 |
| Written exam | Lecture | Study of the electrical system - parts - the benefit of each part, its function and maintenance. | My knowledge and skills | = | 5 |
| Written exam | Lecture | Knowledge of the devices and means of exploiting power in the tug, the hydraulic system - the traction shaft - the rear drive shaft (P.T.O.) - the drive pulley. | My knowledge and skills | = | 6 |
| Evaluate my work | The lecture is practical | Study of the tug structure - parts and benefits - steering system - adjusters - tug steering device. | My knowledge and skills | = | 7 |
| Evaluate my work | The lecture is practical | Knowledge of the types of plows - the importance of the plowing process - the characteristics of good plowing. | My knowledge and skills | = | 8 |
| Evaluate my work | The lecture is practical | Study of dumper plows - disc dumper plows - their use - their parts - maintenance and plowing methods. | My knowledge and skills | = | 9 |
| Evaluate my work | The lecture is practical | Study of excavator plows - rotary plows - underground plows - their use - their parts. | My knowledge and skills | = | 10 |
| Evaluate my work | The lecture is practical | Knowledge of soil smoothing equipment - its use - its parts - leveling, planning and channel-digging machines - its importance and use. | My knowledge and skills | = | 11 |
| Evaluate my | The lecture | Study of mechanized agriculture - fertilizer and seed spreading machine - its parts - types - | My knowledge | = | 12 |

| | | | | | |
|---|---|---|---|---|---|
| work | is practical | calibration. | and skills | | |
| Evaluate my work | The lecture is practical | Study of fertilized seed in lines - its parts - field evaluation - laboratory evaluation. | My knowledge and skills | = | 13 |
| Written exam | Lecture | Study of agricultural machines in lines - potato cultivation - types - standardization. | | = | 14 |
| Written exam | Lecture | Fodder cutting machines - their types - their parts - the combined harvester - its operation - the main assemblies of the harvester. | | = | 15 |

Decision structure .10

| | |
|---|---|
| Protected agriculture methodological book, educational package for the course | 1- Required prescribed books |
| Methodological books taught in corresponding colleges and universities | 2- Main references (sources) |
| Foreign and Arab references for winter field crops | Recommended books and references (scientific journals, reports,...) |
| Searching websites in agricultural sciences | B - Electronic references, Internet sites... |

Course evaluation .10 .10
By distributing the grade out of 100 according to the tasks assigned to .11
the student, such as daily preparation, daily, oral, monthly, written exams,
.reports...etc

Learning and teaching resources .22
Methodological textbooks, if any
Main references..sources
Recommended supporting books and references, scientific journals, and reports
Electronic references, Internet sites

# Course description form

## Course description

**This course description provides a necessary summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the available learning .opportunities. They must be linked to the program description**

| | |
|---|---|
| Musayyib Technical Institute | 1- Educational institution |
| Department of Plant Production Technologies | 2- Scientific Department/Center |
| General soil | 3- Course name/code |
| lecture | 4- Available forms of attendance |
| quarterly | 5- Semester/year |
| 60 | 6- Number of study hours (total) |
| 2024 / 2/28 | The date this description .7 was prepared |
| | |
| Objectives of the course: Granting the student a diploma in the theoretical .8 and practical aspects in order to serve a graduate of a distinguished level and .push him into the practical arena | |
| | |
| Name of the course officer: Prof. Hamid Abd Zaid .8 | |
| | |

| Teaching, learning and assessment strategies |
|---|
| A- Cognitive objectives |
| A1- Teaching the student how to study the physical properties of soil such as |

density, moisture, mechanical analysis, etc

Introducing the student to the chemical properties of soil, such as the degree of -2
.hardness, lime, gypsum, etc

Enabling the student to know how to deal with medical materials and devices

.B - The skills objectives of the course

B1 - Providing the student with the skills of studying the morphological characteristics of the soil

Training the student to know the relationship between soil and plants and to -2 achieve high productivity

Providing the student with the necessary skills to conduct laboratory tests -3
.related to plants and soil and how to give appropriate scientific judgments

Teaching and learning methods -9

(Lecture, laboratory, methodological training, summer training)

Practical and theoretical lectures, laboratory, scientific films, agricultural facility, )
(scientific visits, methodological field training, summer training

Evaluation methods

(Oral exams, written exams, semester exams, final exams, daily evaluation)

C- Emotional and value goals

.C1- Enabling the student to apply theoretical information in a practical way

Developing the student's national spirit to increase production in quantity and -2
.quality

Instilling the concept of community service and the ideal way to deal with the -3 simple segments of society, the peasants and farmers

Developing professional ethics. Agricultural engineer among students by -4
.following the correct professional behavior

D - Transferable general and qualifying skills (other skills related to employability
.and personal development)

D1- Introduction of programs

Course structure -10

| Evaluation method | Teaching method | Name of the unit/topic | Required learning outcomes | hours | the week |
|---|---|---|---|---|---|
| **questions and answers** | Lecture | Soil science - its branches - its importance and the goal of soil analysis | My knowledge and skills | **4= 3+1 hour** | 1 |
| Written exam | Lecture | Some morphological characteristics of soil | My knowledge and skills | = | 2 |
| Written exam | Lecture | Physical characteristics of soil and their relationship to plant growth | My knowledge and skills | = | 3 |
| Written exam | Lecture | Physical characteristics of soil and their relationship to plant growth | My knowledge and skills | = | 4 |
| Written exam | Lecture | Physical characteristics of soil and their relationship to plant growth | My knowledge and skills | = | 5 |
| Written exam | Lecture | Soil water | My knowledge and skills | = | 6 |
| **Evaluate my work** | **The lecture is practical** | Soil temperature and soil air | My knowledge and skills | = | 7 |
| **Asking group questions** | **Lecture** | Organic colloids | My knowledge and skills | = | 8 |
| Evaluate my work | **The lecture is practical** | Clay minerals | My knowledge and skills | = | 9 |
| Evaluate my work | Lecture and practical lesson | Soil ketone exchange capacity | My knowledge and skills | = | 10 |
| Evaluate my work | Lecture and practical lesson | Soil electrical conductivity Ec | My knowledge and skills | = | 11 |
| Evaluate my | **The lecture** | Soil salinity | My knowledge | = | 12 |

| | | | | | |
|---|---|---|---|---|---|
| work | **is practical** | | and skills | | |
| Evaluate my work | **The lecture is practical** | Nutrients and their importance to plants | My knowledge and skills | = | 13 |
| Written exam | **Lecture**<br>**And a practical lesson** | Lime and gypsum in the soil | My knowledge and skills | = | 14 |
| Written exam | **Lecture** | Lime and gypsum in the soil | My knowledge and skills | = | 15 |

| The planned structure -10 | |
|---|---|
| Protected agriculture methodological book, educational package for the course | 1- Required prescribed books |
| Methodological books taught in corresponding colleges and universities | 2- Main references (sources) |
| Foreign and Arab references related to protected agriculture | Recommended books and references (scientific journals, reports,...) |
| Searching websites in agricultural sciences | B - Electronic references, Internet sites... |

Course evaluation -10
By distributing the grade out of 100 according to the tasks assigned to the student, .such as daily preparation, daily, oral, monthly, written exams, reports...etc

| Learning and teaching resources -10 | |
|---|---|
| | Methodological textbooks, if any |
| | Main references..sources |
| | Recommended supporting books and references, scientific journals, reports |
| | Electronic references, Internet sites |

# Course description form

## Course description

**This course description provides a brief summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he or she has made the most of the learning opportunities available. It must be linked to the program description**

| | |
|---|---|
| Musayyib Technical Institute | 1- Educational institution |
| Department of Plant Production Technologies | 2- Scientific Department/Center |
| Seed production | 3- Course name/code |
| lecture | 4- Available forms of attendance |
| quarterly | 5- Semester/year |
| 60 hours per semester, theoretical and practical | 6- Number of study hours (total) |
| 2/28/2024 | 7. The date this description was prepared |
| | |
| Course objectives .8 | |
| Granting the student a diploma in the theoretical and practical aspects to serve the preparation of a graduate of a prestigious level and a career in the .scientific arena | |
| | |
| | |
| Name of the course officer: M.M. Zulfiqar Ali Khanyab | |
| | |

Teaching, learning and evaluation strategies-9

A- Cognitive objectives

A1- Teaching students how to identify the method of raising each plant to .produce seeds

Instructing students on how to conduct important tests on seeds so that they -2 .are able to characterize their various types

Enabling the student to know how to deal with materials and laboratory -3 .equipment

.B - The skills objectives of the course

B1 - Providing the student with the skills of applying scientific methods with regard to examining seeds so that he becomes able to propagate them using modern methods such as plant tissue culture

Training the student to conduct seed certification operations to achieve high -2 productivity

Providing the student with the necessary skills to conduct laboratory tests -3. .related to seeds and soil and how to give appropriate scientific judgments

Teaching and learning methods

Giving scientific and theoretical lectures through presentation screens, PowerPoint, slides, microscopes, experiments examining plant samples, using .various laboratory devices and equipment, and a wooden canopy

Evaluation methods

(Oral exams, written exams, semester exams, final exams, daily evaluation)

C- Emotional and value goals

C1- Enabling the student to apply theoretical information in a scientific manner

Developing the student's national spirit to increase production in quantity and -2 .quality

Instilling the concept of community service and the ideal way to deal with the -3 .simple segments of society, the peasants and farmers

| |
|---|
| Developing professional ethics. Agricultural engineer students by following the -4 .correct professional behavior |
| |
| D - Transferable general and qualifying skills (other skills related to .employability and personal development)<br><br>D1- Introduction of programs |

Course structure -10

| Evaluation method | Teaching method | Name of the unit/topic | Required learning outcomes | Hours | the week |
|---|---|---|---|---|---|
| Listen and ask questions | **Lecture** | The concept of seeds, the importance of seeds, a historical overview of seed production | My knowledge and skills | **4= 3+1 hour** | 1 |
| Practical exercise, meeting and work groups | Lecture and practical lesson | Do not change | My knowledge and skills | = | 2 |
| Written exam | Lecture and practical lesson | Methods of breeding cross-pollinated crops (importation, selection, hybridization, production of hybrids) | My knowledge and skills | = | 3 |
| Written exam | Lecture and practical lesson | Methods of breeding self-pollinating crops (importation, selection, hybridization, production of hybrids). | My knowledge and skills | = | 4 |
| Mini lesson discussing practical exercise and groups | Lecture and practical lesson | Seed certification, the importance of seed certification, stages of seed production | My knowledge and skills | = | 5 |
| Case study, practical exercise and groups | Lecture and practical lesson | Genetic principles: causes of low genetic purity - factors that help maintain genetic purity | My knowledge and skills | = | 6 |
| Listen and ask questions | The lecture is practical | Agricultural principles of seed production | My knowledge and skills | = | 7 |
| Listen and ask questions | The lecture is practical | Field inspection - conditions and objectives - specifications of the field inspector | My knowledge and skills | = | 8 |
| Evaluate my work | The lecture is practical | Dormancy in seeds: causes and treatment | My knowledge and skills | = | 9 |
| Listen and ask questions | The lecture is practical | Production of wheat and rice seeds | My knowledge and skills | = | 10 |
| Evaluate my work | The lecture is practical | Production of yellow corn seeds | My knowledge and skills | = | 11 |

| | | | | | |
|---|---|---|---|---|---|
| Listen and ask questions | The lecture is practical | Production of cotton seeds and sugar beets | My knowledge and skills | = | 12 |
| Evaluate my work | The lecture is practical | Production of seeds of the Solanaceae family - tomato - eggplant - pepper | My knowledge and skills | = | 13 |
| Written exam | **Lecture** | Production of seeds of the Cucurbit family - squash - watermelon - watermelon - | My knowledge and skills | = | 14 |
| Evaluate my work | **practical** | Production of seeds of the Cucurbit family - squash - watermelon - watermelon - | My knowledge and skills | = | 15 |

The planned structure -10

| | |
|---|---|
| The methodological book on agriculture, the educational bag for the course | 1- Required prescribed books |
| Methodological books taught in corresponding colleges and universities | 2- Main references (sources) |
| Foreign and Arab references related to agriculture and seed production | Recommended books and references (scientific journals, reports,...) |
| Searching websites in agricultural sciences | B - Electronic references, Internet sites... |

Course evaluation -10
By distributing the grade out of 100 according to the tasks assigned to the student, .such as daily preparation, daily, oral, monthly, written exams, reports...etc

Learning and teaching resources.13
Methodological textbooks, if any
Main references..sources
Recommended supporting books and references, scientific journals, and reports
Electronic references, Internet sites

# Course description form

## Course description

This course description provides a necessary summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he or she has made the most of the learning opportunities available. .It must be linked to the program description

| | |
|---|---|
| Musayyib Technical Institute | 1- Educational institution |
| Department of Plant Production Technologies | 2- Scientific Department/Center |
| Plant diseases | 3- Course name/code |
| My attendance inside the classroom and laboratories | 4- Available forms of attendance |
| First (fall) semester/second semester | 5- Semester/year |
| 60 hours | 6- Number of study hours (total) |
| 2/28/2024 | 7. The date this description was prepared |

Course objectives .8

:General goal • •

Introducing the student to the most important plant diseases that affect crops, • vegetables, and orchards in terms of symptoms, method of spread, and disease .prevention

:Special goal • •

:The student will be able to •

Diagnoses diseases resulting from viruses, snakeworms, and element -1 • .deficiencies

.Knowledge of parasitic flowering plants-2 •

.Developing the best means to prevent diseases-3 •

| |
|---|
| Course Name |
| Mother. Hamid Abd Zaid Saud |

Teaching, learning and evaluation strategies -9

Strategy: Using whiteboard as a means of clarifying and clarifying the material using pens

lorful and charts

plementing laboratory experiments in the pathology laboratory and observation fields and farms

A- Cognitive objectives

A1- Teaching students how to deal with plant diseases

A2- Enabling the student to know how to deal with laboratory materials and .equipment

.B - The skills objectives of the course

B1- Providing the student with the necessary skills to conduct laboratory tests related to plant diseases

C- Emotional and value goals

.C1- Enabling the student to apply theoretical information in a practical way

C2- Developing the student's national spirit to increase production in quantity and .quality

C3- Instilling the concept of community service and the best way to deal with simple .segments of society such as peasants and farmers

Transferable general and qualifying skills (other skills related to employability and - د .personal development)

D1- Introduction of programs

Teaching and learning methods -10

(Lecture, laboratory, methodological training, summer training)

Giving theoretical and practical lectures through presentation screens, PowerPoint, slides, microscopes, experiments examining plant samples, using .various laboratory devices and equipment, and a wooden canopy

Evaluation methods -11

(Oral exams, written exams, semester exams, final exams, daily evaluation)

.Conducting quick daily exams (Quize) -

.Conducting monthly examinations -

.Conducting semester and final exams - -

## Course structure .10

| Evaluation method | Learning method | Name of the unit or topic (practical) | Name of the unit or topic (theoretical) | Learning Outcomes required | hours | Week |
|---|---|---|---|---|---|---|
| Daily evaluation | Modern teaching methods for theory and practice | Methods of studying plant diseases, studying the disease at the site of its appearance, studying the disease in the laboratory | Classification of plant diseases according to the pathogen, symptoms and agent. | Cognitive skill | 2 theoretical + 2 practical | the first |
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods for theory and practice | The most important diseases caused by algae and lichens, Cyrogyra rice | Plant diseases caused by algae, their characteristics, symptoms and methods of resistance. | Cognitive skill | 2 theoretical + 2 practical | The second and third |
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods for theory and practice | Physiological diseases on plants, blossom end rot on tomato and rosehip, stone fruit tree gum. | Non-parasitic diseases, their causes, symptoms, nitrogen deficiency, potassium, phosphorus, magnesium, sulfur, iron, and zinc deficiency. | Cognitive skill | 2 theoretical + 2 practical | the fourth |
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods for theory and practice | Diseases of element deficiency (nitrogen, potassium, phosphorus, zinc, boron). | Supplementing the symptoms of element deficiency, boron, manganese, copper, and monidium. | Cognitive skill | 2 theoretical + 2 practical | Fifth |

| | | | | | | |
|---|---|---|---|---|---|---|
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods for theory and practice | Combating one of the diseases spreading in the institute. | Plant diseases resulting from irregular irrigation, high ground water levels, blossom end rot on tomato and raspberry fruits, and stone fruit gum disease. | Cognitive skill | 2 theoretical + 2 practical | VI |
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods for theory and practice | Training students on how to sterilize agricultural soil and sterilize seeds prepared for planting. | Methods of controlling plant diseases (agricultural, biological and chemical methods (mercury bacterial pesticides, antibiotics), plant breeding and improvement). | Cognitive skill | 2 theoretical + 2 practical | Seventh |
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods for theory and practice | Showing scientific films about the most important common diseases. | Mycotoxins produced by some fungi that infect grains, fruits, and foodstuffs. | Cognitive skill | 2 theoretical + 2 practical | VIII |
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods for theory and practice | Diseases resulting from irregular irrigation and high ground water levels. | Showing scientific films about the most important common diseases | Cognitive skill | 2 theoretical + 2 practical | Ninth |
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods for theory and practice | Diseases of poor ventilation | Mycoplasma as a cause of plant diseases, its characteristics, the most important diseases it causes, its symptoms, its life cycle, and methods of resistance. | Cognitive skill | 2 theoretical + 2 practical | The tenth |
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods (interactive). | The most important diseases caused by mycoplasma. | Plant pathogenic bacteria. | Cognitive skill | 2 theoretical + 2 practical | Eleventh |
| Daily evaluation, noting the | Presentation media) | The most important diseases caused by bacteria are bacterial | Plant viruses, types of viruses, chemical | Cognitive skill | 2 theoretical + 2 | Twelveth |

| | | | | | | |
|---|---|---|---|---|---|---|
| answers to questions during the lecture | | wilt on cucurbits, and fire blight on raspberries and apples. | composition of fronds. | | practic al | |
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods (interactive ). | The most important plant diseases caused by viruses are tomato mosaic disease, tomato leaf curling and yellowing disease, and cucurbit mosaic disease. | General diseases of viral diseases. | Cognitiv e skill | 2 theoret ical + 2 practic al | Thirteent h |
| Daily evaluation, noting the answers to questions during the lecture | Presentatio n media) | The most important diseases caused by snakeworms are slow decline disease on citrus fruits, and root knot disease. | The life cycle of parasitic caecilians and the changes caused by nematodes to plant tissue | Cognitiv e skill | 2 theoret ical + 2 practic al | Fourteen th |
| Daily evaluation, noting the answers to questions during the lecture | Modern teaching methods (interactive ). | Isolating caecilians from soil, infected plant parts, roots and seeds. | Resistance to tapeworms and the most important diseases they cause. | Cognitiv e skill | 2 theoret ical + 2 practic al | Fifteenth |

| Course development plan -13 |
|---|
| Providing the possibility of academic support in organizing field visits -<br>Providing an appropriate classroom environment that enables the teacher to diversify - teaching strategies<br>Providing information technology in the campus library -<br>Hosting experts from outside the institute or from the work environment for which they - are preparing to benefit from their expertise in developing the course according to the .actual need of the labor market |

| Infrastructure -14 | |
|---|---|
| Methodical book on winter vegetable crops | 1- Required prescribed books |
| Supporting sources for each course | 2- Main references (sources) |

| | |
|---|---|
| Scientific journals, as well as research, theses and dissertations by professors in the same specialty | Recommended books and references (scientific journals, reports,...) |
| www.google.com website | B - Electronic references, Internet sites... |

Course evaluation -15
By distributing the grade out of 100 according to the tasks assigned to the student, .such as daily preparation, daily, oral, monthly, written exams, reports...etc

| | |
|---|---|
| **nt diseases - theoretical part D. Majeed Muteb van**<br>**Dr.. Ali Hussein Al-Bahdali** | Learning and teaching resources .16<br>Methodological textbooks, if any |
| | Main references..sources |
| | Recommended supporting books and references, scientific journals, and reports |
| | Electronic references, Internet sites |