

Diploma in Greenhouse Technology

S. No	Sem	Category	Course Code	Course Title	No. Of Hours /Week		No. Of Credits		
					T	P	T	P	
1	I	Part – I General Education	18DSWG11	Life Skills	4	-	4	-	
2			18DENG11	Communicative English	4	-	4	-	
3			18DCSG11	Fundamentals of Information Technology	4	-	4	-	
				Total		12	-	12	-
4		Part – II Skill component	18DGTS11	Basics of Protected Culture	4	2	4	2	
5			18DGTS12	Nursery Production and Field Preparation of Protected Culture	4	2	4	2	
6			18DGTS13	Production Technology of Vegetable Crops	4	2	4	2	
			Total		12	6	12	6	
1	II	Part – I General Education	18DSWG21	Professional Skills	4	-	4	-	
2			18DENG21	Professional English	4	-	4	-	
3			18DGTG21	Production Technology of Cut Flower Crops	4	-	4	-	
				Total		12		12	
4		Part – II Skill	18DGTS21	Production Technology of Vegetable Crops Lab	2	4	2	4	
5			18DGTS22	Pest and Disease Management in Protected Cultivation	4	2	4	2	

6		component	18DGTS23	Internship	-	6	-	6
			Total		6	12	6	12
			Grand Total		42	18	42	18

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)

Madurai – 04

Class	: Community College Courses	Part I	: GE
Semester	: I	Hours	: 04
Subject Code	:18DSWG11	Credits	: 04

LIFE SKILLS

COURSE OUTCOME

On successful completion of this course, the students will be able to

CO1: understand concepts, meaning, definitions & fundamentals of life skills.

CO2: provide them a thorough grounding in the basics of the subject

CO3: develop and articulate respect for the diversity of talents, ways of knowing and learning

Unit I: Introduction to life Skills

Introduction to life Skills and Importance – Personality – Definition – Traits – SWOT

Unit II: Concept of Self

Concept of Self: Self Image / Identity / Self Esteem – Factors Affecting Self Esteem – High / Low Esteem – Attitude Building – Meaning – Elements – Factors Affecting Attitude

Unit III: Interpersonal Skills

Interpersonal Skills: Meaning – Elements – Factors Affecting Interpersonal Skills – Need for Interpersonal Skills

Unit IV: Thinking

Thinking: Meaning – Types – Creative – Reasoning – Techniques.

Unit V: Emotions

Emotions: Definition – Characteristics – Types – Emotional Intelligence – Etiquettes – Grooming – Making Positive Impressions.

TEXT BOOK:

1. Alphonse Xavier S.J., *We Shall Overcome – A Text Book on Life Coping Skills*, ICRDCE Publications, Chennai: March 2004.

REFERENCE BOOKS:

1. RavikanthRao. K. *Life Skills Education*, 2016
2. Anderson, J. *The Perceptions of Students, Teachers, and Parents Regarding the Value of the LIFE SKILLS and Lifelong Guidelines Program. Unpublished PhD Dissertation:* East Tennessee State University,2005.
3. Assaly, I. *A content analysis of the reading and listening activities in the EFL textbook of master class.* Education Journal ,2014.
4. Shiv Khera, *You Can Win*, Macmillan India Ltd: New Delhi: 1998.

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
Madurai – 04

Class	: Community College Courses	Part I	: GE
Semester	: I	Hours	: 04
Subject code	: 18DENG11	Credits	: 04

COMMUNICATIVE ENGLISH

COURSE OUTCOME

On successful completion of this course, the students will be able to

CO1: Acquire the basic language skills.

CO2: **Speak and write** without mistake

CO3: **Develop confidence in their voice**

Unit I : LISTENING SKILL

Basic Listening Skills - Listening to Radio and Television - Listening to Talks and Presentations – Tips for Effective Listening

Unit II : SPEAKING SKILL

Basic Speaking Skills – Steps to Speak Easy – Formal and Informal Conversation– Describing pictures and people

Unit III : READING SKILL

Importance of Reading - Levels of Reading - Techniques of Reading – Reading Comprehension.

Unit IV : WRITING SKILL

Sentence - Phrase, Clause - Construction of Paragraph - Linkage and Cohesion

Unit V : GRAMMAR AND USAGE

Kinds of Sentences - Parts of Sentence - Parts of Speech - Types of Sentences

REFERENCE

Material will be supplied by the Department of English

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
Madurai – 04

Class	:Community College Courses	Part I	: GE
Semester	: I	Hours	: 04
Subject Code	: 18DCSG11	Credits	: 04

FUNDAMENTALS OF INFORMATION TECHNOLOGY

COURSE OUTCOMES

On successful completion of this course, the students will be able to

CO1: Introduce the fundamentals of computing devices and reinforce computer vocabulary, particularly with respect to personal use of computer hardware and software, the Internet, networking.

CO2: Identify and analyze computer hardware, software, and network components.

CO3: Provide foundational or “computer literacy” curriculum that prepares students for life-long learning of computer concepts and skills.

UNIT I: INTRODUCTION TO COMPUTER SYSTEMS

Introduction to Computers: Introduction – Importance of Computers – Characteristics of Computers – Classification of Computers – Uses of Computers Five Generations of Modern Computers: Introduction – First Generation Computers – Second Generation Computers – Third Generation Computers – Fourth Generation Computers – Fifth Generation Computers classification of Digital Computer Systems: Introduction – Microcomputers – Minicomputers – Mainframes – Supercomputers – Network Computers. Anatomy of a Digital Computer: Introduction - Parts of a Computer.

UNIT II: CENTRAL PROCESSING UNIT, MEMORY, INPUT AND OUTPUT DEVICES

Central Processing Unit (CPU) and Memory: Introduction – Central Processing Unit (CPU) – Memory – Memory Organization – Random Access Memory (RAM) Read Only Memory (ROM) – Registers – Factors Affecting Processor Speed – Instruction Set – Machine Cycle – Working of CPU and Memory. Input Devices: Introduction – Keyboard – Mouse – Trackball – Game Controllers – Scanners – Barcode Reader – Card Reader – Digitizer – Voice Recognition – Webcams – Digital Cameras Video Cameras (Camcorders) – Optical Character Recognition (OCR) – Optical Mark Recognition (OMR) – Intelligent Character Recognition (ICR) – Magnetic Ink Character Recognition (MICR) Output Devices: Introduction – Monitor – Printer – Plotter – Multimedia Projector – Speech Synthesizers – Sound Cards and Speakers – Dumb, Smart and Intelligent Terminals.

UNIT III:PROGRAMMING LANGUAGES AND OPERATING SYSTEMS

Programming Languages: Introduction – Machine Languages – Assembly Languages – High- Level Languages – Types of High-Level Languages – Compilers and Interpreters – Compilation Process. Operating Systems: Introduction – Functions of an Operating System – Classification of Operating Systems.

UNIT IV:DATABASE MANAGEMENT SYSTEMS AND COMPUTER NETWORKS

Introduction to Database Management Systems: Introduction – Information – Data and Data Management – Database Systems – Organization of Database – Characteristics of Data in a Database – Database Management Systems – Functions of DBMS – Database Users. Computer Networks: Introduction – Overview of a Network – Communications Processors – Communications Media – Telecommunications Software – Types of Networks – Network Topology – Network Protocols – Network Architecture.

UNIT V:INTERNET, WORLD WIDE WEB AND ELECTRONIC MAIL

Internet & World Wide Web: Introduction – What is Special about the Internet? – Internet Access – Internet Basics – Internet Protocols – Internet Addressing – World Wide Web (WWW) – Web Pages and HTML – Web Browsers – Searching the Web – Internet chat. Overview of Electronic Mail: Introduction – How E-mail works? – Why Use E- mail? – E-Mail – Names and Addresses – Mailing Basics.

LIST OF PRACTICAL

1)MS -WORD

1. Preparing a news Letter
2. Designing your Bio-Data
3. Creating and editing the table
4. Create Mail Merge
5. Advertisement Designing

2)MS -EXCEL

1. Operating on the sheets
2. Using formulas and functions
3. Perform Student's Mark Statement
4. Display Score Boards using Pie Charts
5. Display Sales Analysis using Bar Charts

3)MS -ACCESS

1. Create an Employee Table
2. Create a Stock Table and insert 10 records
3. Create Student Mark List
4. Generating Queries in Access

4)MS -POWERPOINT

1. Creating a new presentation based on template
2. Displaying College Details
3. Displaying Advertisement Presentation

TEXTBOOKS:

1. Alexis Leon and Mathews Leon *Fundamentals of Information Technology*, L& L Consultancy Pvt. Ltd., 1999, Second Edition.

Unit I – Chapters 1, 2, 3, 4

Unit II – Chapters 7, 9, 10

Unit III – Chapters 13, 14

Unit IV – Chapters 16, 21

Unit V – Chapters 24, 25

REFERENCE BOOKS:

1. Rajaraman Neeharika Adabala.V., *Fundamentals of Computers* PHI Learning Private Limited, Delhi, 2015, Sixth Edition.
2. Sarkar.S.K., A.K.Gupta, *Elements of Computer Science* S.Chand & Company LTD, Delhi, Second Edition, 2002
3. Balagurusamy.E., *Fundamentals of Computing and Programming Updated*, First Edition Tata McGraw Hill Education PVT LTD, 2010.
4. <https://en.wikipedia.org>
5. <https://bosslinux.in/sites/default/files/BOSS4.0-Usermanual.pdf> (For EduBOSS3.0)
6. <https://wiki.openoffice.org/wiki/Documentation>
7. <http://windows.microsoft.com/en-in/windows/windows-basics-all-topics>

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)

Madurai – 04

Class: Diploma (Green House Technology)	Part II	:Skill
Semesters : I	Hours	: 06
Subject code : 18DGTS11	Credits	: 06

BASICS OF PROTECTED CULTURE

COURSE OUTCOMES

On successful completion of this course, the students will be able to

CO1: understand the basic principles of greenhouse farming

CO2: know the different types of protected structures and its uses

CO3: acquainted with soil and climatic factors under protected condition

Unit I : Protected cultivation

Present status, scope and importance of protected cultivation – International and indian scenario of protected culture – Status of protected cultivation in tamil Nadu – Pros and Cons of protected cultivation.

Unit II : Types of protected structures

Types of protected structures – Low cost structures – Green house – Poly house – Poly tunnels – Net house – Hot beds – Cold frames – Maintenance of structures.

Unit III : Greenhouse and its functions

Green house components and functions – Designs and principles used in protected structures – Features and specifications of protected structures – Materials for protected structures – Survey, structural drawing and layout plan - Leveling, and erection of protected structures – Maintenance of protected structures.

Unit IV: Management practices in protected cultivation

Role soil factors: Soil temperature, pH and Electrical conductivity (EC) maintenance – Micro and Macro nutrient content – Organic carbon content - Cation exchange capacity (Sodium and Ammonium Acetate, Centrifuge Method) management

Unit V: Factors responsible for crop growth

Environmental factors in protected cultivation: Light intensity and air temperature - Relative humidity (RH) and CO₂ concentration - Air movement mechanism

LIST OF PRACTICALS:

- Discussion on present scenario of protected cultivation
- Analysis of pros and cons of protected cultivation
- Identification of different components of protected structures
- Preparation of layout for commercial protected structures
- Practicing handling of soil analysis and climatic factors monitoring gadgets

TEXTBOOK:

1. Prasad S and Kumar U *Greenhouse Management for Horticultural Crops* (2nd Ed.), Agrobios, India 2018.

REFERENCE BOOKS:

1. Kumar.N, *Introduction to Horticulture* (7th Ed.), Oxford & IBH, 2017.
2. Brahma Singh, Balraj Singh, Naved Sabir, Murtaza Hasan, *Advances in protected cultivation*, New india publishing agency, ISBN – 10
3. Spehia.R.S & Sharma I.P, *Protected cultivation for sustainable Horticulture*, Specifications – ISBN : 9788121107877 / 2011 /

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)

Madurai – 04

Class: Diploma (Green House Technology)

Part II : Skill

Semesters : I

Hours : 06

Subject code : 18DGTS12

Credits : 06

**NURSERY PRODUCTION AND FIELD PREPARATION
OF PROTECTED CULTURE**

COURSE OUTCOMES

On successful completion of this course, the students will be able to

CO1: impart knowledge on nursery media and media preparation

CO2: develop technical skill on sexual and sexual propagation methods

CO3: know the role and functioning of precision farming techniques

Unit I: Introduction to Nursery

Importance of nursery and its role – Components of nursery - Nursery media and its properties - Perlite – Vermiculite – Spaghnum moss - Coco peat – Lay outs – Plant propagation structures

Unit II: Nursery and its type

Types of Nursery:Vegetablenursery – Fruit nursery – Flower crops nursery – Methods of nursery Preparation: raised bed nursery – Portray nursery

Unit III: Plant propagation

Sexual propagation, A Sexual propagation and micro propagation - Watering, Weeding and nutrient management in nursery – Pest and disease management in nursery – Commonpossible errors in nursery activities

Unit IV: Nursery management

Soil disinfection: Physical and chemical methods – Field bed preparation : Media composition –Bed sizes, width, height – Planting : Season of planting, Age of seedling, spacing, Planting methods

Unit V: Precision farming technology

Importance of precision farming techniques – Principles and concepts –Components of irrigation - Drip and fertigation system – Precision equipments – Laying out, assembling and functioning of drip andfertigation system – Maintenance techniques

LIST OF PRACTICALS:

- Identification of different nursery media
- Raising different types of nurseries
- Preparation of kitchen garden in college
- Visit to commercial nurseries and discussion.
- Practicing propagation methods
- Practicing field disinfection and field preparation
- Visit to commercial drip and fertigation unit

TEXTBOOK:

1. De.L.C,*Production of seed and planting materials of horticultural crops*, Aavishkar Publishers Distributors, 2014.

REFERENCE BOOKS:

1. Kumar.N, *Introduction to Horticulture*(7th Ed.),Oxford &IBH , 2017.
2. Brahma Singh, Balraj Singh, NavedSabir, MurtazaHasan, *Advances in protected cultivation*, New india publishing agency,ISBN – 10
3. Spehia.R.S&Sharma I.P, *Protected cultivation for sustainable Horticulture*, Specifications – ISBN : 9788121107877 / 2011 /

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)

Madurai – 04

Class: Diploma (Green House Technology)	Part II	: Skill
Semesters : I	Hours	: 06
Subject code : 18DGTS13	Credits	: 06

PRODUCTION TECHNOLOGY OF VEGETABLE CROPS

COURSE OUTCOMES

On successful completion of this course, the students will be able to

CO1: study the intercultural operations of tomato under protected condition

CO2: enhance the knowledge on intercultural operations of capsicum under protected condition

CO3: learn the intercultural operations of lettuce under protected condition

Theory

Unit I :Protected Cultivation Techniques for Tomato

Tomato:Protected cultivation techniques - Introduction – Varieties – Nursery preparation – Soil – Climate – Field preparation – Season and planting

Unit II: Cultural Operations for Tomato

Tomato :Irrigation and weed management – Nutrient and fertilizer management – Intercultural operations – Maturity indices – Harvesting – Postharvest management

Unit III: Protected Cultivation Techniques for Capsicum

Capsicum :Protected cultivation techniques - Introduction – Varieties – Nursery preparation – Soil – Climate – Field preparation – Season and planting

Unit IV: Cultural Operations for Capsicum

Capsicum :Irrigation and weed management – Nutrient and fertilizer management – Intercultural operations – Maturity indices – Harvesting – Postharvest management

Unit V: Protected Cultivation for Cucumber

Cucumber- Protected cultivation techniques - Introduction – Varieties – Nursery preparation – Soil – Climate – Field preparation – Season and planting – Irrigation and weed management – Nutrient and fertilizer management – Intercultural operations – Maturity indices – Harvesting – Postharvest management

LIST OF PRACTICALS:

- Tomato - Nursery preparation and management
- Capsicum - Nursery preparation and management
- Learn the techniques of growing vegetables in Polyhouse.
- Field preparation and planting
- Field study – Intercultural operations
- Practicing harvesting and postharvest management

TEXTBOOK:

1. Balraj Singh, *Protected Cultivation of Vegetable Crops Hardcover*, Kalyani Publishers, 2005

REFERENCE BOOKS:

1. Balraj Singh, *Protected Cultivation of Vegetable Crops* , kalyani Publishers , jan 2005
2. Singh.D.K&Peter.K.V, *Protected cultivation of horticultural crops*, PublisingAgencyNew India, 2013
3. ParvathaReddy.P, *Sustainable Crop Protection Under Protected Cultivation*
4. Singh.D.K, *Modern vegetable varieties & Production Technology* ,, IBDC Publishers , 2007

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)

Madurai – 04

Class	:Community College Courses	Part I	: GE
Semester	: II	Hours	: 04
Subject Code	: 18DSWG21	Credits	: 04

PROFESSIONAL SKILLS

COURSE OUTCOMES

On successful completion of this course, the students will be able to

CO1: acquire skills to manage time and to recognize the importance of motivation and goal setting

CO2: understand concepts, meaning of social skills and its importance

CO3: apply workplace etiquettes and preparing for the job.

Unit I:Goal Setting

Goal Setting: Definition – SMART Principle – Difficulties in Goal Setting – Process and Types.

Unit II: Leadership Skills

Leadership Skills: Styles of Leadership – Transactional and Transformational – Johari Window – Methods and Techniques of Developing Interpersonal Skills.

Unit: III: Time Management

Time Management: Meaning – Importance – Obstacles in Managing – Steps for Effective Time Management – Stress – Meaning – Types – Factors Causing Stress – Coping Mechanisms.

Unit IV: Management and Planning

Management and Planning: Meaning – Principles – Practices–Functions – Types of Plans – Steps in Planning

Unit V:Strategic Planning

Strategic Planning: Development Mapping – Sustainability – Commercial Viability – Market Analysis.

TEXT BOOK:

1. Alphonse Xavier S.J., *We Shall Overcome – A Text Book on Life Coping Skills*, ICRDCE Publications, Chennai: March 2004.

REFERENCE BOOKS:

1. Leonard S.Genry.,*Journal of Extension*,(October, 2006), **Study of life skill development** of Oklahoma 4-H alumni during the years Of 4-H participation 1969-1998.
2. Thomas A. Smith.,*Journal of Extension* ,April, 2005,**Evaluating a youth leadership life skills development program..**
3. Bhatia .H. S.,*Art of Interview*,19th Edition, 2013,

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)

Madurai – 04

Class :Community College Courses
Semester : II
Subject code : 18DENG21

Part I : GE
Hours : 04
Credits : 04

PROFESSIONAL ENGLISH

COURSE OUTCOMES

On successful completion of this course, the students will be able to

CO1: expand their vocabulary

CO2: become effective communicators

CO3: acquire the career skills

Unit I : WORKING WITH WORDS

Vocabulary – Spelling and Pronunciation – Punctuation

Unit II : SPEECH PRACTICE

Short speeches on topics of day to day - Speaking for Life and Work – Group Discussion

Unit III : ACADEMIC CORRESPONDENCE

Academic Letter Writing - Report Writing -Proposal Writing

Unit IV : GRAMMAR AND USAGE

Transformation of Sentences (Affirmative into Negative) – Framing Questions – Tag Questions

Unit V : CAREER SKILLS

Applying for Job - Covering Letter - Resume and Effective Profiling – Interviews

REFERENCE

Material will be supplied by the Department of English

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
Madurai – 04

Class: Diploma (Green House Technology)	Part II	: GE
Semesters : II	Hours	: 04
Subject code : 18DGTG21	Credits	: 04

PRODUCTION TECHNOLOGY OF CUT FLOWER CROPS

COURSE OUTCOMES

On successful completion of this course, the students will be able to

CO1: learn the protected cultivation practices of cut rose

CO2: train the protected cultivation practices of chrysanthemum

CO3: educate the protected cultivation practices of carnation and gerbera

Unit I : Protected Cultivation Techniques for Cut Rose

Cut Rose I: Protected cultivation techniques – Soil, Climate, Varieties – Propagation – season and planting – Irrigation and weeding – Fertigation management

Unit II : Intercultural Operations for Rose

Cut Rose II: Intercultural operations – Harvesting indices – Harvesting – Yield - Grading– Postharvest management – Packaging and transport

Unit III: Protected Cultivation Techniques for Chrysanthemum

Chrysanthemum – Protected cultivation techniques – Soil, Climate, Varieties – Propagation – Season and planting – Irrigation and weeding – Fertigation management – Intercultural operations – Harvesting indices – Harvesting – Yield – Grading – Postharvest management – Packaging and transport

Unit IV : Protected Cultivation for Carnation

Carnation – Protected cultivation techniques – Soil, Climate, Varieties – Propagation – Season and planting – Irrigation and weeding – Fertigation management – Intercultural operations – Harvesting indices – Harvesting – Yield - Grading – Postharvest management – Packaging and transport

Unit V : Protected Cultivation Techniques for Gerbera

Gerbera – Protected cultivation techniques – Soil, Climate, Varieties – Propagation – Season and planting – Irrigation and weeding – Fertigation management – Intercultural Operations –Harvesting indices – Harvesting – Yield – Grading – Postharvest management – Packaging and transport

LIST OF PRACTICALS:

Cut rose and Chrysanthemum - Identification of types and varieties

- Carnation and Gerbera – Identification of types and varieties
- Propagation methods and nursery preparation
- Field preparation and planting
- Field study – Intercultural operations
- Practicing harvesting and postharvest management

TEXTBOOK:

1. Chattopadhyay. S.K. *Commercial floriculture*, GENE – TECH Books – Jan 2007.
2. Prasad S and Kumar U, *Greenhouse Management For Horticultural Crops* (2nd Ed.), Agrobios, India 2018.

REFERENCE BOOKS:

1. Jitendar Singh, *Precision farming in Horticulture*, - New India Publishing House – February 2013.
2. *Protected cultivation of high value vegetables and cut flowers – A value chain approach*, ICAR, New Delhi

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)

Madurai – 04

Class: Diploma (Green House Technology)

Semester: II

Subject code:18DGTS21

Part II :Skill

Hours : 06

Credits : 06

PRODUCTION TECHNOLOGY OF VEGETABLE CROPS LAB

COURSE OUTCOMES

On successful completion of this course, the students will be able to

CO1: learn the intercultural operations of cauliflower under protected condition

CO2: study the intercultural operations of cabbage under protected condition

CO3: develop skill on intercultural operations of cauliflower and cabbage under protected condition

Unit I: Protected Cultivation Techniques for Cauliflower

Cauliflower :Protected Cultivation Techniques – Introduction – Varieties – Nursery preparation – Soil – Climate – Field preparation – Season and planting

Unit II: Cultural Operations for Cauliflower

Cauliflower :Irrigation and Weed Management – Nutrient and fertilizer management – Intercultural operations – Maturity indices – Harvesting – Postharvest management

Unit III : Protected Cultivation Techniques for Cabbage

Cabbage: Protected Cultivation Techniques - Introduction – Varieties – Nursery Preparation – Soil – Climate – Field Preparation – Season and Planting

Unit IV: Cultural Operations for Cabbage

Cabbage :Irrigation and Weed Management – Nutrient and Fertilizer Management – Intercultural Operations – Maturity Indices – Harvesting – Postharvest Management

Unit V : Protected Cultivation Techniques for Broccoli

Broccoli : Protected cultivation techniques - Introduction – Varieties – Nursery preparation – Soil – Climate – Field preparation – Season and planting – Irrigation and weed management – Nutrient and fertilizer management – Intercultural operations – Maturity indices – Harvesting – Postharvest management

LIST OF PRACTICALS:

- Identification of Garden Items
- Tomato – Nursery preparation and management
- Field Preparation and Planting of Tomato Seedlings in field
- Planting of Tomato Seedlings in Grow Bags
- Capsicum - Nursery preparation and management
- Field Preparation and Planting of Capsicum Seedlings in Poly House
- Planting of Capsicum Seedlings in Grow Bags in Poly House
- Planning of a Kitchen Garden
- Cucumber - Nursery preparation and management
- Field Preparation and Planting of Cucumber Seedlings in Poly House
- Planting of Cucumber Seedlings in Grow Bags in Poly House
- Cauliflower&Cabbage– Field preparation and sowing
- Cabbage and cauliflower – Nursery preparation and management
- Cabbage and cauliflower – Field preparation and sowing
- Field study – Intercultural operations
- Practicing harvesting and postharvest management

TEXTBOOK:

1. *Protected cultivation of high value vegetables and cut flowers – A value chain approach*, ICAR, New Delhi, NAIP, 2014.

REFERENCE BOOKS:

1. Balraj Singh, *Protected Cultivation of Vegetable Crops*, Kalyani Publishers, Jan 2005
2. Singh, D.K. & Peter, K.V., *Protected cultivation of horticultural crops*, Publishing Agency New India, 2013
3. Parvatha Reddy, P., *Sustainable Crop Protection Under Protected Cultivation*, Springer Nature, 2016.
4. Singh, D.K., *Modern vegetable varieties & Production Technology*, IBDC Publishers, 2007

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)

Madurai – 04

Class: Diploma (Green House Technology)

Semesters : II

Subject code : 18DGTS22

Part II :Skill

Hours : 06

Credits : 06

PEST AND DISEASE MANAGEMENT IN PROTECTED CULTIVATION

COURSE OUTCOMES

On successful completion of this course, the students will be able to

CO1: understand the integrated pest and disease management practices of vegetable crops under protected condition

CO2: learn the integrated pest and disease management practices of cut flower crops under protected condition

CO3: develop knowledge on commercial project preparation and SWOC analysis

Unit I : Integrated Pest Management in Tomato

Integrated pest and disease management in tomato –Integrated pest and disease management in capsicum –Integrated pest management in capsicum –Integrated disease management in capsicum

Unit II : Integrated Pest Management for Cucumber and Muskmelon

Integrated pest and disease management in cucumber and muskmelon –Integrated pest and disease management in cauliflower and cabbage –Integrated pest and disease management in lettuce

Unit III: Integrated Pest Management in CutRose

Integrated pest management in cut rose –Integrated disease management in cut rose – Integrated pest management in chrysanthemum –Integrated disease management in chrysanthemum

Unit IV: Integrated Pest Management in Carnation

Integrated pest management in carnation –Integrated disease management in carnation –
Integrated pest management in gerbera –Integrated disease management in gerbera.

Unit V: Cost Economics for Cultivating Vegetables and Cutflovers under Protected Cultivation

Vegetable and cut flowers –Economics of protected cultivation – Benefit cost ratio (BC Ratio) –SWOC analysis – Analysis

LIST OF PRACTICALS:

- Vegetable crops - Field identification of pests and management
- Vegetable crops - Field identification of disease and management
- Cut flower crops - Field identification of pests and management
- Cut flower crops - Field identification of disease and management
- Preparation of project for protected cultivation Vegetables / Cut flowers
- SWOC analysis (Strength, Weakness, Opportunity and Constraints)

TEXTBOOK:

1. Emmanuel.N.,Sujatha.A,KiranPatro.M..Reddy. Srinivasulu.N, Samuel and Patro. *Text book on Integrated pest and disease management of Horticultural crops*. Astral Publications

REFERENCE BOOK:

1. Mukherjee.D,*Specialty Cut flowers: Production Technologies*:NayaUdyog Publisher Jan 2008

Web sources

- i. cari.res.in/MBM-English/MBM-CARI-7
- ii. www.actahort.org/books/710/710_38.htm
- iii. www.aphorticulture.com
- iv. <http://www.jains.com/Protected%20Cultivation/poly%20houses.htm>
- v. http://nhb.gov.in/pdf/Technical_Standard.pdf

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
Madurai – 04

Class: Diploma (Green House Technology)

Part II : Skill

Semester : II

Hours : 06

Subject code: 18DGTS23

Credits : 06

INTERNSHIP

INTERNSHIP ASSESSMENT

(Req. Max: Formative: 60 marks, Summative: 40 marks)

Formative Evaluation (Industrial Partner)

- Evaluation Form (60 marks)

Applicat ion of Knowle dge	Care for Tools& Equipm ent	Econo mic use of Materi al	Safety Conscious ness	Spe ed	Accur acy	Quality of Workman ship	Amo unt of Work	Numb er of Attem pts	Attitu de

Rating Scale: Excellent- 6; Very Good- 5; Good- 4; Fair- 3; Satisfactory-2; Poor- 1.

Summative Evaluation (Course Teacher)

- Case Study/ Project (20 marks)
- Viva (20 marks)