

South Eastern University of Sri Lanka
Faculty of Applied Sciences
Department of Biological Sciences

Course Information			
Course Code	BTS 00122	Course Title	Postharvest Technology of F & V
Semester	Level IV – Sem I	Academic Year	2019/2020
Course Delivered by	Dr. MIS. Safeena	Office Hours	
Day	Thu 10.00 – 12.00	E-Mail	safeenim@seu.ac.lk

Learning Objectives		
To provide adequate knowledge and skills on post-harvest handling, processing and preservation of fruits, vegetables and grains.		
Intended Learning Outcomes		
On successful completion of the course the students will be able to;		
<ol style="list-style-type: none"> 1. Explain the causes of post-harvest food losses and the preservation methods. 2. Carryout post-harvest food loss assessment. 3. Explain the pre-harvest factors affecting the post-harvest life and quality aspects. 4. Carryout fresh produce handling appropriately: maturity determination, harvesting, grading, packaging, treatment and storage. 5. Survey the storage practices in the area and recommend for better storage techniques. 6. Explain various methods of food processing and preservation. 7. Carryout processing and preservation of vegetables and fruits. 		
Schedule		
Week	Materials to be covered	Assessment
01	<u>Introduction to post-harvesting technology</u> <ul style="list-style-type: none"> • What is post-harvest technology? • Why post-harvest technology important? 	

01 & 02	<u>Post-harvest losses of agricultural products</u> <ul style="list-style-type: none"> • Post-harvest losses. • Factors affecting post-harvest losses. • Types of post-harvest losses. • Causes of post-harvest losses at harvest, packaging, storage, transportation and drying. 	
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	<input type="checkbox"/> Management of post-harvest losses.	
03	<u>Biological and environmental factors involved in deterioration</u> <input type="checkbox"/> Biological factors involved in deterioration (respiration, ethylene production, compositional change, growth and development, transpiration, physiological breakdown, physical damage, and pathological breakdown).	
04	<u>Biological and environmental factors involved in deterioration (cont.)</u> <input type="checkbox"/> Environmental factors involved in deterioration (temperature, relative humidity, atmospheric composition, ethylene and light).	
05	<u>Post-harvest technology procedures</u> <ul style="list-style-type: none"> • Temperature management. • Cooling methods (room cooling, forced air cooling, vacuum cooling, package icing, hydro cooling, and other methods). • Advantages of pre-cooling. 	Unit examination I (10%)
06	<u>Post-harvest technology procedures (cont.)</u> <ul style="list-style-type: none"> • Relative humidity management. • Measures to control relative humidity. • Supplements to temperature and management. <p style="text-align: right;">humidity</p>	

07	<u>Maturation and maturity indices</u> <ul style="list-style-type: none"> • Definition of maturity. • Types of maturity. • Indices of maturity. • Characteristics of a maturity index. • Assessment of crop maturity. 	
08	<u>Harvesting systems</u> <ul style="list-style-type: none"> • Process of harvesting. • Hand harvesting (advantages and disadvantages). • Mechanical harvesting (advantages and disadvantages). 	
09	<u>Preparation for fresh market</u> <ul style="list-style-type: none"> • Field containers. • Transport from the field. • Temperature protection. 	
10	<u>Preparation for packing</u> <ul style="list-style-type: none"> • Delivery to the packer. • Sorting line. • Sizing. • Special treatments. • Packing. 	Unit examination II (10%)
11	<u>Storage systems</u> <ul style="list-style-type: none"> • Storage considerations. • Refrigeration. • Storage building. • Controlled atmospheric storage. 	

12	<u>Post-harvest pest and diseases of selected commodities</u> <ul style="list-style-type: none"> • The pathogen. • Infection process. • Resistance to infection. • Post-harvest diseases of tropical fruits. • Post-harvest diseases of vegetables. 	
13	<u>Food processing background</u> <ul style="list-style-type: none"> • Primary processing. • Secondary processing. • Why do we process food? • Unit operations in food processing. • Methods of food processing. 	
14	<u>Food preservation principles and processes of fruits, vegetables and grain/ cereal products</u> <ul style="list-style-type: none"> • Why preservation? • How long to preserve? • Food preservation methods. 	
15	<u>Food packaging</u> <ul style="list-style-type: none"> • Food packaging techniques. • Food packaging systems. • Packaging materials and food applications. • Modified atmosphere packaging. 	Unit examination III (10%)

Main text books:	<ol style="list-style-type: none"> 1. Narayanasamy, P. (2006) Postharvest pathogens and disease management, 1st Edn., Wiley-Interscience. 2. Kader, Adel A. (2002) Postharvest technology of horticultural crops, University of California, Agriculture and Natural Resources. 3. Thompson, A.K. (2015) Fruits and Vegetables; vol. 1: harvesting, handling and storage, Wiley-Blackwell., 4. Chakraverty, Amalendu; singh, R. Paul (2014) Postharvest technology and food engineering, CRC press.
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Students' responsibility	Check Moodle regularly for course updates and announcements. To enroll yourself in the Moodle page of the course do the following steps in SEUSL website. ➤ Choose "E-Learning". ➤ login using your SEUSL user name and password. ➤ From the available courses under "FAS", "Biological Sciences", choose "BTS 00122 ➤ The Enrolment key will be provided at the class.
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