

Republic of Iraq

The Ministry Of Higher  
Education

& Scientific Research

بسم الله الرحمن الرحيم



University: Diyala

College: agriculture

Department: Horticulture and  
Land Landscape Gardening

Stage: 4

Lecturer name: Prof. Dr. Ayad  
Assi Obaid

Qualification: PhD

Place of work: University of Diyala

## Flow up of implementation celli pass play

Course Instructor	Ayad Assi Obaid						
E_mail	Ayadassi73@gmail.com						
Title	Plant tissue culture						
Course Coordinator	The first chapter \ Stage 4						
Course Objective	Application of plant tissue culture technique , micropropagation						
Course Description	micropropagation , initial and culture of callus , isolation of protoplast, secondary metabolites production , production of plant free from virus .						
Textbook	Plant tissue culture, dr. M. A. Salman – pant biotechnology T. K. Ramawat.						
References	Plant tissue culture, dr. M. A. Salman – pant biotechnology T. K. Ramawat.						
Course Assessment	The first monthly test (theoretical)	The second monthly test (theoretical)	The first monthly test ( Lab. )	The second monthly ( Lab. )	Final examination		Final grade
					theoretical	Lab.	
	14	14	6	6	40	60	100

<b>Syllabus</b>		
<b>Week</b>	<b>Theoretical</b>	<b>Lab.</b>
<b>1</b>	Introduction and history of plant tissue culture	Getting started with Tissue culture : Media preparation , Steril technique and laboratory equipment
<b>2</b>	Physiological factors affecting growth and morphogenesis	Getting started with Tissue culture : Media preparation , Steril technique and laboratory equipment
<b>3</b>	Using tissue culture for plant propagation techniques	Getting started with Tissue culture : Media preparation , Steril technique and laboratory equipment
<b>4</b>	Micropropagation In vitro : Uses and Methods	Getting started with Tissue culture : Media preparation , Steril technique and laboratory equipment
<b>5</b>	Micropropagation In vitro : Uses and Methods	Organic addition , Osmotic and PH effects .
<b>6</b>	Problems of Establishment : Phenolic Oxidation	Organic addition , Osmotic and PH effects .
<b>7</b>	Secondary products.	Sterilization.
<b>8</b>	Initiation and Growth of Callus	Explant using in plant tissue culture .
<b>9</b>	Protoplast isolation and culture	The use of meristem and shoot tip culture in micropropagation in vitro .
<b>10</b>	Organ culture : Organogenesis.	The use of meristem and shoot tip culture in micropropagation in vitro .
<b>11</b>	Embryo Culture : Embryogenesis	The use of meristem and shoot tip culture in micropropagation in vitro .
<b>12</b>	Haploid and Anther culture	The use of meristem and shoot tip culture in micropropagation in vitro .
<b>13</b>	Meristem and shoot tip culture	Callus Initiation
<b>14</b>	Meristem and shoot tip culture	Problems of Establishment
<b>15</b>	Physiological factors affecting growth and morphogenesis	Problems of Establishment

**Dean Signature**

**structor Signature:**