

Module name:	<i>Animal Taxonomy</i>			
Module level, if applicable	<i>2nd</i>			
Code, if applicable	<i>ZOO,121</i>			
Subtitle, if applicable	<i>NONE</i>			
Courses, if applicable	<i>none</i>			
Semester(s) in which the module is taught	<i>1st +2nd semester</i>			
Person responsible for the module	<i>Dr Amal EL-Sayed</i>			
Lecturer	<i>Dr Amal EL-Sayed</i>			
Language	<i>Arabic</i>			
Relation to curriculum	<i>compulsory</i>			
Type of teaching, contact hours	<i>Total Contact hours/semester:58 hrs.</i> <ul style="list-style-type: none"> • <i>Lecture:28</i> • <i>Laboratory :30</i> <i>Class size:47 students</i>			
Workload	<i>Total-contact hours</i>	<i>Self-study</i>	<i>Discussion</i>	<i>Total workload</i>
	<i>58</i>	<i>35</i>	<i>15</i>	<i>108</i>
Credit points	<i>3.7 ECTS-3 KSA</i>			
Requirements according to the examination regulations	<i>Absence not exceed 25% (attendance at least 75%)</i>			
Recommended prerequisites	<i>none</i>			

Module objectives/intended learning outcomes

- **Knowledge:**
- *On completing this course, students will be able to:*
- *Apply the nomenclature of animals*
- *Identify digestion, locomotion, respiration and reproduction in different animals.*
- **Cognitive Skills**
- *Differentiate between external feature and internal structure of studied animals.*
- *Classify studied animals*
- **Interpersonal Skills & Responsibility**
- *On completing this course, students will be able to:*
- *work effectively in a team in lab.*
- *independently on collecting information on a required topic*
- **Communication, Information Technology, Numerical**
- *On completing this course, students will be able to:*
- *use IT and search for information*
- **Psychomotor**
- *On completing this course, students will be able to:*
- *Examine the microscopic slides and Sketch of the studied species of the animal kingdom*
- .

Content	List of Topics		
	No. of Weeks	Contact Hrs.	% of content
Introduction to Taxonomy. - Principles of Animal Taxonomy. - History of Taxonomy. - Scientific Classification of Organisms (Basic Characters of Classification), Biological Nomenclature & concepts of Species.	2	8	13.7
Classification Scheme Sub-Kingdom: Protista (Protozoa). Classification, Basic Characters. - Examples of Protozoan Animals: <i>Amoeba</i> , <i>Euglena</i> and <i>Vorticella</i> . Sub-Kingdom: Parazoa Porifera (sponge). Basic Characters, Examples, Types	3	12	20.7
Mid-term1+ Feedback	1	3	5.2
Sub-Kingdom: Eumetazoa Diploplastic -Phylum: Coelentrata General characters of, Classification, Examples: <i>Hydra</i> , <i>Obelia</i> , <i>Aurelia</i> , <i>Alcyonium</i> & Stony corals	4	16	27.5
Mid-term2+ Feedback	1	3	5.2
Triploplastic animals -Phylum: Platyhelminthes, Basic characters, Classification, Examples: <i>Planaria</i> . (Acoelomates) - Phylum: Nematodes, Basic Characters & Classification, Examples: <i>Ascaris</i> . (Pseudocoelomates)	3	12	20.7
Phylum: Annelida: Basic Characters, Classification, Examples: <i>Allolobophora</i> , <i>Neries</i> , & <i>Hirudo</i> . (Coelomates).	1	4	6.8
Study and examination requirements and forms of examination	<p><i>1st mid-term Exam</i> <i>10 marks</i></p> <p><i>2nd mid-term Exam</i> <i>10 marks</i></p> <p><i>Activities</i> <i>10 marks</i></p> <p><i>Practical Exam</i> <i>20 marks</i></p> <p><i>Final theoretical</i> <i>50 marks</i></p>		

Media employed	<p>-Classrooms be equipped with smart board and e-podium and laboratories provided with smart board Saving devices such as microscopes in the lab, microscopic specimens, practical models and other laboratory requirements.</p> <p>-D2L.</p> <p>-e-mail</p> <p>-http://global.britannica.com/science/taxonomy</p>
Reading list	<ul style="list-style-type: none"> • Khalil M. R.,et al. ,(1996): <i>General Zoology, Angelo Press,Cairo,</i> • ELhossen, A.H. and Demian (1990):<i>Practical Zoology, E.S. .Cairo ,.Part 2.</i> <i>Abdel-Aziz, M. et al.,(2007):Invertebrates. Cairo .Angelo. Press.</i>

Module name:	<i>Cytology</i>			
Module level, if applicable	<i>The second</i>			
Code, if applicable	<i>BIO 123</i>			
Subtitle, if applicable	<i>None</i>			
Courses, if applicable	<i>None</i>			
Semester(s) in which the module is taught	<i>1st and 2nd semester</i>			
Person responsible for the module	<i>Dr. Zeinab Eltahir Bakheet Eltahir.</i>			
Lecturer	<i>Dr. Zeinab Eltahir Bakheet Eltahir</i>			
Language	<i>Arabic</i>			
Relation to curriculum	<i>compulsory</i>			
Type of teaching, contact hours	<i>Total Contact hours/semester:58 hrs.</i> <ul style="list-style-type: none"> • <i>Lecture:14</i> • <i>Laboratory:30</i> <i>Class size:58 students</i>			
Workload	<i>Total-contact hours</i>	<i>Self-study</i>	<i>Discussion</i>	<i>Total workload</i>
	<i>58</i>	<i>55</i>	<i>15</i>	<i>128</i>
Credit points	<i>4.4 ECTS-3KSA</i>			
Requirements according to the examination regulations	<i>To attend more than 75% of lecture and practical study.</i>			
Recommended prerequisites	<i>None</i>			

<p>Module objectives/intended learning outcomes</p>	<p><u>1.0 Knowledge</u></p> <ul style="list-style-type: none"> - Describe the Variety of different methods in studying the living cells and fixed cells, and the micro structure of every organallae in the cell and its different functions <p><u>2. Cognitive Skills</u></p> <ul style="list-style-type: none"> - Explain the structure of organallae in the animal and plant cells - Compare the prokaryotes with eukaryotes and Comparing between the animal and plant cells <p><u>3.0 Interpersonal Skills & Responsibility</u></p> <ul style="list-style-type: none"> - Perfects the skill of self-learning and responsibility <p><u>4.0 Communication, Information Technology, Numerical</u></p> <ul style="list-style-type: none"> - Perfects the skill of using technology and the modern techniques for research <p><u>5.0 Psychomotor</u></p> <ul style="list-style-type: none"> - Examine microscopic samples with a detailed drawing of them 																																												
<p>Content</p>	<table border="1"> <thead> <tr> <th data-bbox="368 927 1098 1039">List of Topics</th> <th data-bbox="1098 927 1182 1039">No. of Weeks</th> <th data-bbox="1182 927 1326 1039">Contact Hours</th> <th data-bbox="1326 927 1433 1039">%</th> </tr> </thead> <tbody> <tr> <td data-bbox="368 1039 1098 1106">1- Introduction in Cytology and determining the methods of studying the cell</td> <td data-bbox="1098 1039 1182 1106">1</td> <td data-bbox="1182 1039 1326 1106">4</td> <td data-bbox="1326 1039 1433 1106">6.9%</td> </tr> <tr> <td data-bbox="368 1106 1098 1207">2- Studying the structure of Prokaryotic cell and comparing it with eukaryotic cell and its two kinds, the plant and the animal</td> <td data-bbox="1098 1106 1182 1207">1</td> <td data-bbox="1182 1106 1326 1207">4</td> <td data-bbox="1326 1106 1433 1207">6.9%</td> </tr> <tr> <td data-bbox="368 1207 1098 1308">3- Studying the chemical components of the cell, organic compounds, and inorganic compounds and the method of exploring some of them.</td> <td data-bbox="1098 1207 1182 1308">1</td> <td data-bbox="1182 1207 1326 1308">4</td> <td data-bbox="1326 1207 1433 1308">6.9%</td> </tr> <tr> <td data-bbox="368 1308 1098 1408">4- Studying the different theories of plasma membrane's structure and its way in transforming to fit with its different functions.</td> <td data-bbox="1098 1308 1182 1408">2</td> <td data-bbox="1182 1308 1326 1408">8</td> <td data-bbox="1326 1308 1433 1408">13.8%</td> </tr> <tr> <td data-bbox="368 1408 1098 1453">5- Mid-term exam 1+feedback</td> <td data-bbox="1098 1408 1182 1453">1</td> <td data-bbox="1182 1408 1326 1453">3</td> <td data-bbox="1326 1408 1433 1453">5.2%</td> </tr> <tr> <td data-bbox="368 1453 1098 1621">6- Studying the micro structure of Mitochondria, blastides, Endoplasmic Reticulum, Golgi apparatus, and determining the functions of every organellae and its relation with other organella</td> <td data-bbox="1098 1453 1182 1621">4</td> <td data-bbox="1182 1453 1326 1621">16</td> <td data-bbox="1326 1453 1433 1621">27.5%</td> </tr> <tr> <td data-bbox="368 1621 1098 1666">7- Mid-term exam 2+feedback</td> <td data-bbox="1098 1621 1182 1666">1</td> <td data-bbox="1182 1621 1326 1666">3</td> <td data-bbox="1326 1621 1433 1666">5.2%</td> </tr> <tr> <td data-bbox="368 1666 1098 1800">8- Studying the micro structure of nuclei, lysosome and peroxisome and determining the functions of every organellae and its relation with other organella.</td> <td data-bbox="1098 1666 1182 1800">2</td> <td data-bbox="1182 1666 1326 1800">8</td> <td data-bbox="1326 1666 1433 1800">13.8%</td> </tr> <tr> <td data-bbox="368 1800 1098 1868">9- Studying the cytoskeleton of the cell, and the kinds of chemotaxis.</td> <td data-bbox="1098 1800 1182 1868">1</td> <td data-bbox="1182 1800 1326 1868">4</td> <td data-bbox="1326 1800 1433 1868">6.9%</td> </tr> <tr> <td data-bbox="368 1868 1098 1912">10- Studying the cell cycle and the kinds of divisions</td> <td data-bbox="1098 1868 1182 1912">1</td> <td data-bbox="1182 1868 1326 1912">4</td> <td data-bbox="1326 1868 1433 1912">6.9%</td> </tr> </tbody> </table>	List of Topics	No. of Weeks	Contact Hours	%	1- Introduction in Cytology and determining the methods of studying the cell	1	4	6.9%	2- Studying the structure of Prokaryotic cell and comparing it with eukaryotic cell and its two kinds, the plant and the animal	1	4	6.9%	3- Studying the chemical components of the cell, organic compounds, and inorganic compounds and the method of exploring some of them.	1	4	6.9%	4- Studying the different theories of plasma membrane's structure and its way in transforming to fit with its different functions.	2	8	13.8%	5- Mid-term exam 1+feedback	1	3	5.2%	6- Studying the micro structure of Mitochondria, blastides, Endoplasmic Reticulum, Golgi apparatus, and determining the functions of every organellae and its relation with other organella	4	16	27.5%	7- Mid-term exam 2+feedback	1	3	5.2%	8- Studying the micro structure of nuclei, lysosome and peroxisome and determining the functions of every organellae and its relation with other organella.	2	8	13.8%	9- Studying the cytoskeleton of the cell, and the kinds of chemotaxis.	1	4	6.9%	10- Studying the cell cycle and the kinds of divisions	1	4	6.9%
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Module name:	General Physics II			
Module level, if applicable	2nd			
Code, if applicable	PHYS 125			
Subtitle, if applicable	none			
Courses, if applicable	None			
Semester(s) in which the module is taught	1st & 2nd semester			
Person responsible for the module	Dr. Maisun Asad Makl			
Lecturer	Dr. Maisun Asad Makl			
Language	Arabic			
Relation to curriculum	Compulsory course for biology program			
Type of teaching, contact hours	Total Contact hours/semester:44 hrs. <ul style="list-style-type: none"> • Lecture:14 • Laboratory :30 Class size:50 students			
Workload	Total-contact hours	Self-study	Discussion	Total workload
	44	25	15	84
Credit points	2.8 ECTs - 2 KSA			
Requirements according to the examination regulations	To attend more than 75% of lecture and practical study			
Recommended prerequisites	Phys I			

<p>Module objectives/intended learning outcomes</p>	<p><i>Students will be cognizant of the most important and basic concepts in Fluid physics and Thermophysics</i></p> <p><i>Students should be able to give an explanation of the scientifically true natural phenomena associated with Fluid Dynamics and the Heat.</i></p> <p><i>Differentiate between the terminology in the fluid physics and in thermophysics</i></p> <p><i>The ability to verify the relevant theories through accurate logical mathematical conclusions The ability to analyse conversations.</i></p> <p><i>The student bears the responsibility of self-learning and can communicate more effectively within the Collaborative Learning note the interaction of female students</i></p> <p><i>The student masters the use of search engines for relevant topics.</i></p> <p><i>She is capable of using the Internet to gather information to assist her in the interpretation of the natural phenomena</i></p> <p><i>Searching databases available on the university website</i></p>
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Content	List of Topics	No. of Weeks	Contact Hours	%
	1.Course Orientation		5	15
2. General Physics				
3. Fluid mechanics: Density and Pressure: the Archimedes principle, Bernouli Equation applications				
4.Experiment 1: Measuring Fluid Density				
5.Experiment 2: Measurement of Solid Fluidity				
6. Experiment 3: Viscosity				
7. Experiment 4: Surface Tension				
1 st Midterm Exam +Feedback		1	2	6.6
9. Thermal basics: Temperature as concept, The Zero-law, Temperature gauges, Thermometers, thermal power units, heat quantity, Specific heat, Heat capacity, Latent heat, and determining Specific heat via the Method of Mixture.		4	12	26.6
10. Fifth experiment (Achieving Archimedes' law)				
11. Sixth experiment (set the melting point of the Wax)				
12. Seventh Experiment (set the melting point of Naphthalene)				
13. Eighth Experiment (Set specific heat of solids)				
2 nd Midterm Exam +Feedback		1	2	6.6
15. Thermal properties of the material and heat transfer: thermal expansion of solid and liquid objects, heat transfer by conduction, convection and radiation.		4	13	26.6
16. Ninth experiment (Set the latent heat of ice)				
17. Practical Revision				
Study and examination requirements and forms of examination	20 degrees for two Midterm exams 10 degrees for assignments, Class work and reseach 50 degrees for final theoretical Exam 20 degrees for final practical Exam			
Media employed	classroom provided with smartboard , computer , internet connection and enough seats Lab provided with the required devices			

Reading list

- *Theoretical Part: Issawi, Abdul Aziz Hamid, Walid Tawfiq & Mohammed Younis. General Physics for the first-year university Students. Ed. 2007 (First Volume) Riyadh: AlRushd Editors*
- *Practical Part: Fahad, Marwan Ahmad & Abdul Aziz Ali Masoud. Fundamental Experimental Physics: Obeikan Library, Riyadh*

Module name:	Plant Kingdom			
Module level, if applicable	Second level			
Code, if applicable	BOT 122			
Subtitle, if applicable	none			
Courses, if applicable	none			
Semester(s) in which the module is taught	2nd			
Person responsible for the module	Dr. Aisha Ohag Osman Mohammed			
Lecturer	Dr. Aisha Ohag Osman Mohammed			
Language	Arabic			
Relation to curriculum	not applies			
Type of teaching, contact hours	Total Contact hours/semester:58 hrs. <ul style="list-style-type: none"> • Lecture:28 • Laboratory :30 Class size:50 students			
Workload	Total-contact hours	Self-study	Discussion	Total workload
	58	25	10	120
Credit points	4.1 ECTS -3 KSA			
Requirements according to the examination regulations	To attend more than 75% of lecture and practical study.			
Recommended prerequisites	none			

<p>Module objectives/intended learning outcomes</p>	<p>1. Knowledge:</p> <ul style="list-style-type: none"> - Learn about the plant cell structure and organelles and their function. - Comparing the steps meiosis divisions and mitosis. - To master academic skills to identify and study the plant kingdom divisions. <p>2. Skills cognitive:</p> <ul style="list-style-type: none"> - Analysis of the results for many of the related problems (germination of some seeds) and genetic questions. - To master academic skills to identify and study the plant kingdom divisions. <p>3. Interpersonal Skills & Responsibility:</p> <ul style="list-style-type: none"> - Expresses her view is committed to the ethics of dialogue and listening to the other opinion. <p>4. Communication, Information Technology, Numerical:</p> <ul style="list-style-type: none"> - Use modern technology for required references search to do duties and show. <p>5. Psychomotor:</p> <ul style="list-style-type: none"> - Take the precautions in the laboratory. - doing of laboratory experiments draw conclusions.
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Content	List of Topics	No. Of weeks	Contact Hrs	%
		<i>Theoretical part</i>		
	1. Cell theory, prokaryotic and eukaryotic cells + optical microscope.	1	4	7.7
	2. Structure of cell, the chemical structure of the cell, the cell organelles and their functions, theoretical and practical.	2	8	15.38
	3. Cell divisions, mitosis and meiosis.	2	8	15.38
	Mid- term exam1+feedback			
	4. Some physiological processes theoretical and practical.	1	३	
	5. Systematic (Bacteria, Algae, Fungi, Arshegonium, Ferns, Mosses and Lichens) theoretically and practically.	1	4	7.7
		4	16	30.77
	Mid- term exam1+feedback	1	३	
		1	4	7.7
	6. Angiosperms and gymnosperms.			
	7. Flower, seeds, fruits theoretically and experimentally.	2	8	15.38
Study and examination requirements and forms of examination	1-Theoretical 1 st test – 6 th week-10% Theoretical 2 nd test – 12 th week-10% 2- Practical test+ diverse activities -During semester-10% 3- Final practical test- 16 th - 20% 4- Final theoretical test – 16 -19 th - 50%			

Media employed	<p>1. Accommodation</p> <ul style="list-style-type: none"> • 70 seat in lecture hall <p>2. Computing resources</p> <ul style="list-style-type: none"> • Computer connected to a smart board <p>Other resources</p> <ul style="list-style-type: none"> • Prepared slices of vegetarian samples and other sections of the plant. Laboratories equipped with the course requirements Monitors labs.
Reading list	<p>1. List Required Textbooks :</p> <p>١- سليمان محمد (١٤٢٤) : علم تشریح النبات دار كنوز أشبيليا للنشر والتوزيع السعودية. ٢- العروسيو آخرون (١٩٩٨) : المملكة النباتية دار المطبوعات الجديدة الإسكندرية. ٣- طليبة حسين السيد (٢٠٠٣) : علم النبات دار النشر الدولي للنشر والتوزيع السعودية.</p> <p>2. List Essential References Materials :</p> <p>١- العروسيو آخرون (١٩٩٨) : المملكة النباتية دار المطبوعات الجديدة الإسكندرية. ٢- العروسيو آخرون (١٩٩٨) : النباتات العام دار المطبوعات الجديدة الإسكندرية.</p> <p>3. List Recommended Textbooks and Reference Material:</p> <p>(Scientific journals, reports, etc ...).</p> <ul style="list-style-type: none"> • 4. List Electronic Materials : • Related internet websites to the course. <p>5. Other learning material :</p> <p>Microsoft Office – word ,power pointetc</p>

Module name:	Technology laboratory techniques			
Module level, if applicable	2 nd level			
Code, if applicable	BIO 124			
Subtitle, if applicable				
Courses, if applicable	Technology laboratory techniques			
Semester(s) in which the module is taught	1 semesters			
Person responsible for the module	Dr. Zeinab Mohammed Saleh			
Lecturer	Dr. Zeinab Mohammed Saleh			
Language	Arabic			
Relation to curriculum	Compulsory course for biology program			
Type of teaching, contact hours	Contact hours:58 <ul style="list-style-type: none"> • Lecture:28 • laboratory :30 Class size:64 students.			
Workload	<i>Total-contact hours</i>	<i>Self-study</i>	<i>Discussion</i>	<i>Total workload</i>
	58	57	15	130
Credit points	4.4 ECTS-3 KSA			
Requirements according to the examination regulations	To attend more than 75% of lecture and practical study			
Recommended prerequisites	no			
Module objectives/intended learning outcomes	<p>Knowledge: the students are able to</p> <p>Enumerate different types of microscopes describing how image Formed and enlarged by their lenses</p> <p>Cognitive Skills: the students are able to</p> <ol style="list-style-type: none"> 1- Explain the steps to prepare permanent microscopic sectors 2- Compare the properties of stabilizers and pigments with determining 			

	<p>the suitable one for each tissue and study</p> <p>Interpersonal Skills & Responsibility: the students are able to</p> <p>1- Perfects the skill of self-learning and take responsibility and participate in group discussions and accept the opinions of others</p> <p>Communication, Information Technology, Numerical: the students are able to</p> <p>1- Perfects the skill of using modern technology to increase the knowledge and preparation of research and communicate effectively oral and writing with colleagues and a professor course</p> <p>Psychomotor: the students are able to</p> <p>Mastered the use of lab tools and equipment in performing lab experiments With writing a comment on the results</p>
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Content	<i>List of Topics</i>			
		<i>No. of Weeks</i>	<i>Contact Hrs.</i>	<i>% of content</i>
	A glimpse of optics and how to configure and enlarge the pictures by simple lenses and study the structure of different types of simple optical microscope	1	4	6.89
	Identification the different types of compound microscopes .Study the structure of the compound optical microscope and how to configure and enlarge the picture through its multiple lenses, how it is used and maintained.	2	8	13.79
	A study of some anesthetics necessary to experiments. In addition to study of simple and compound chemical stabilizers and identification the advantages and disadvantages of each them , and how to choose the suitable stabilizer	2	8	13.89
	Mid-term 1 +feedback	1	3	5.17
	Steps to prepare histological permanent section including how to obtain a sample - fixation – washing - dehydration –removal of alcohol – saturation by wax – micro-dissection- load in slides - dyeing sector and finally save the sector as a permanent slide	2	8	13.89
	Types of biological dyes and factors affecting the dyeing process	1	4	6.89
	Mid-term 2 +feedback	1	3	5.17
	Methods of rapid lab preparation such Squash Method to study stages of plant divisions, blood smears, squamous cells, yeast or bacteria - and preservation of insects	3	12	20.89

	<p>Methods of preparation of plant samples (Temporary - semi-permanent - permanent preparation) and Steps to prepare dry grassy or preservation in a special solutions 1 4 6.89</p> <p>8-Types and structure of electronic microscopes And Preparation sectors of the electronic microscope 1 4 6.89</p>
Study and examination requirements and forms of examination	<p>20 degrees for two Midterm exams</p> <p>10 degrees for assignments, Class work and reseach</p> <p>50 degrees for final theoretical Exam</p> <p>20 degrees for final practical Exam</p>
Media employed	<p>classroom provided with smartboard , computer , internet connection and enough seats</p> <p>Lab provided with the required devices , light microscopes and models for application of the practical part of the course</p>
Reading list	<p>١- المجاهر و تقنياتها، الخليفة محمد صالح و عبد العزيز الصالح عمادة شؤون المكتبات -جامعة الملك سعود - المملكة العربية السعودية - الرياض (٢٠٠٨م)</p> <p>٢ - التقنية المجهرية إعداد التحضيرات الميكروسكوبية أنسجة- خلية- كيمياء أنسجة ، البنهاوي محمود احمد و منير على الجنزوري دار المعارف - جمهورية مصر العربية- القاهرة (١٩٨٩م).</p> <p>٣- مبادئ التحضير النسيجي (التحضير المجهرى) ، الخطيب ، عماد إبراهيم و خلود أبو رمان الطبعة الرابعة دار البازوردي العلمية - عمان- الأردن (١٩٩٧م)</p> <p>٤- أساسيات تحضير العينات النباتية ، الدعيجى، عبدا لله رشيد ، مليجى عبد السلام محمد ، عبد الفتاح محمد جلال محمد دار الخريجي للنشر و التوزيع- المملكة العربية السعودية - الرياض (١٩٩٧م).</p> <p>٥- أساسيات علم التحضير النسيجي، الطردة، محمود محمد و جمال حمد عثمان و أسامه خالد الرطروط و محمد أبو دية دار الثقافة للنشر و التوزيع - عمان - الأردن (١٩٩٢م)</p> <p>٦- أساسيات علم كيمياء الأنسجة (النظرية و التطبيقية)- الطيب نوري بن طاهر- جامعة الملك سعود -عمادة شؤون المكتبات (١٤١٥هـ)</p>