	Ministry of Higher Education and Scientific Research - Iraq University of AL_mustaqbal College of Science Department of Biology	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	CLASSIFICATION OF ENTOMOLOGY			**Module Delivery**	
Module Type	CORE			**Theory** **Lecture** **Lab** **Practical** **Seminar**	
Module Code	UOMU035241				
ECTS Credits					
SWL (hr/sem)					
Module Level	2		**Semester of Delivery**	4	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Prof. Dr. Ali Shaalan Moalif		**e-mail**	ali.s.moalif@uomus.edu.iq	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**		

Relation with Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Fundamentals of Entomology	**Semester**	3
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Identify the distinguishing characteristics of an insect. 2. Identify the three main sections of an insect. 3. Insect Identification 4. Identify the different life stages of insects. 5. Describe how insects are classified. 6. Identify the distinguishing characteristics of insect orders. Identify the distinguishing characteristics of insect families
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Students are trained in the basics of insect classifications and preservation of collected samples in the laboratory condition for future studies. 2. The behavioral paradigm, insect physiology and biological applications of various insects are studied in detail. 3. Nutritional requirements of different insects are discussed and this will help the students to establish own insect culture at home or fields. 4. The training helps the students to apply for different competitive exams and get selected. 5. Taxonomical training in identification and classification of insects helps students get job opportunities as entomologists or in related fields.
Indicative Contents المحتويات الإرشادية	• Systematics may be defined as the study of the kinds and diversity of organisms and the relationships among them. Taxonomy, the theory and practice of identifying, describing, naming, and classifying organisms, is an integral part of systematics. Classification is the arrangement of organisms into groups (*taxa*, singular *taxon*) on the basis of their relationships. • It follows that identification can take place only after a classification has been established. It should be emphasized that not all authors adopt these definitions. Taxonomy is often used as a synonym of systematics (as defined above), while classification is sometimes used rather loosely (and incorrectly) as a synonym of identification. • Approximately three-fourths of a million species of insects have so far been described and named, and their number is being gradually increased from year to year. So far as those competent to judge are able to estimate, it

	seems probable that this number represents perhaps one-fifth or one-tenth of those which actually exist upon our planet at the present time. Their descriptions fill libraries and their final identification requires the knowledge of specialists. • All animals, including insects, are classified by characteristics that are similar. The animal kingdom is the most general category. It is divided into groups until the insects that are most alike are classified together. Field guides or insect keys are references that usually include the following information: a. Description of the insect b. Distinguishing features of the order c. How different insects are related to one another d. The lifestyle and environment of the insect Field Guides are used because nobody can memorize all the information on insect classification. Currently there are 29 orders of insect's entomologist agree upon.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل		**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل		**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل			

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7

	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**Lecture # 1- Systematics and Taxonomy** 1. Naming and Describing Insects 2. Classification 1) The History of Insect Classification 3. Identification 1) Key to the Orders of Insects
Week 2	**Lecture # 2- Apterygote Hexapods** 1. Collembola 2. Protura 3. Diplura
Week 3	**Lecture # 3** 1. Microcoryphia 2. Zygentoma
Week 4	**Lecture # 4 - Paleoptera** 1. Ephemeroptera **2.** Odonata
Week 5	**Lecture # 5 – The Plecopteroid, Blattoid, and Orthopteroid Orders** 1. Plecoptera 2. Embioptera 3. Dictyoptera
Week 6	**Lecture # 6** 1. Isoptera 2. Grylloblattodea 3. Dermaptera
Week 7	Mid-term Exam
Week 8	**Lecture # 8** 1. Phasmida 2. Mantophasmatodea 3. Orthoptera 4. Zoraptera
Week 9	**Lecture # 9– The Hemipteroid Orders** 1. Psocoptera

	2. Phthiraptera
Week 10	**Lecture # 10** 1. Hemiptera 2. Thysanoptera
Week 11	**Lecture # 11 – The Panorpoid Orders** 1. Mecoptera 2. Diptera
Week 12	**Lecture # 12** 1. Siphonaptera 2. Trichoptera 3. Lepidoptera
Week 13	**Lecture # 13 – The Remaining Endopterygote Orders** 1. Megaloptera 2. Raphidioptera
Week 14	**Lecture # 14** 1. Neuroptera 2. Coleoptera
Week 15	**Lecture # 15** 1. Strepsiptera 2. Hymenoptera
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to taxonomy; insect collections
Week 2	Lab 2: The insect head and mouthparts
Week 3	Lab 3: Apterygota and primitive pterygote orders
Week 4	Lab 4: Orthopteroid orders.
Week 5	Lab 5: Hemipteroid orders
Week 6	Lab 6: Panorpoid orders; Higher insect orders
Week 7	Lab 7: Neuropteroid orders
Week 8	Lab exam; Completion of insect collections
Week 9	Lab 9: 1- Phasmida 2- Mantophasmatodea 3- Orthoptera 4- Zoraptera
Week 10	Lab 8: The Hemipteroid Orders

Week 11	Lab 10: The Hemipteroid Orders 1. Hemiptera 2. Thysanoptera
Week 12	Lab 11: **The Panorpoid Orders** 1. Mecoptera 2. Diptera
Week 13	Lab 12: **The Remaining Endopterygote Orders** 1. Megaloptera 2. Raphidioptera
Week 14	A reviewing for Exam
Week 15	Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	• Chapman, R., 1990. The insect: structure and function: The English language. *Bristol, UK: Book Society and Hodder and Stoughton, Great Britain*. • Gillott, C., 2005. *Entomology*. Springer Science & Business Media. • Gullan, P.J. and Cranston, P.S., 2014. The insects: an outline of entomology. John Wiley & Sons.	No
Recommended Texts	• Barnard, P.C., 2011. *The royal entomological society book of British insects*. John Wiley & Sons. • Packard, A.S., 1898. *A Text-book of Entomology: Including the Anatomy, Physiology, Embryology and Metamorphoses of Insects, for Use in Agricultural and Technical Schools and Colleges as Well as by the Working Entomologist*. Macmillan.	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering	

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.