

المستوى: الرابع	اسم المقرر : <b>Computer Graphics</b>	كود المادة : <b>Math 443</b>
عدد الوحدات الدراسية: ٢ ساعة معتمدة نظري ٢: تمارين: ٠ عملي: ١		التخصص : الإحصاء وعلوم الحاسب

<p><b>For students undertaking this course, the aims are to:</b></p> <p>(1) Study graphics Hardware includes brief information about the components of interactive graphics system.</p> <p>(2) Study graphics Software includes how to deal with output primitives of scenes such as scan converting algorithms, 2-dimensional geometry transformations and their matrix representations and efficient clipping algorithms for viewing objects.</p>	٢ - هدف المقرر:
٣ - المستهدف من التدريس المقرر:	
<p><b>a- Knowledge and Understanding :</b></p> <p><b>On completing this course, students will be able to:</b></p> <p>a1- Understand what are computer graphics.</p> <p>a2- Define computer graphics applications and interactive graphics system.</p> <p>a3- Apply scan converting algorithms for regular and irregular geometric shapes.</p> <p>a4- Apply algorithmic aspects of clipping operation on viewing pictures.</p> <p>a5- Apply the constructive algorithms using numerical values.</p>	أ-المعلومات والمفاهيم:
<p><b>b- Intellectual Skills:</b></p> <p><b>On completing this course, students will be able to:</b></p> <p>b1- apply methods for scan converting complex scenes.</p> <p>b2- understand the principles of animations.</p> <p>b3- write C++ programs for given computer graphic algorithms.</p> <p>b4- think about the importance of subjects introduced in the other computer sciences.</p>	ب-المهارات الذهنية
<p><b>c-Professional and Practical Skills:</b></p> <p><b>On completing this course, students will be able to:</b></p> <p>c1- Apply scan-conversion methods on objects.</p> <p>c2- Apply clipping operations on viewports.</p> <p>c3- Clarify the principle motions, and shearing of geometric objects.</p> <p>c4- code efficient C++ of the taught algorithms.</p>	ج- المهارات المهنية الخاصة بالمقرر:
<p><b>d-General and Transferable Skills:</b></p> <p><b>On completing this course, students will be able to:</b></p> <p>d1- analyze the scenes and apply suitable scan-converting methods to view on the computer devices.</p> <p>d2- Increase the experience of constructing efficient algorithms.</p> <p>d3- Increase the experience of modifying the presented algorithms to do some special tasks.</p>	د- المهارات العامة :
<p><b>- Introductory to computer graphics:</b></p> <ul style="list-style-type: none"> <li>• Computer graphics and their applications.</li> <li>• Elements of pictures created in computer graphics.</li> </ul>	٤ - محتوى المقرر:

<ul style="list-style-type: none"> <li>• Interactive graphics system.</li> </ul> <p><b>- Output primitives and scan conversion</b></p> <ul style="list-style-type: none"> <li>• Algorithms for scan-converting of points and lines.</li> <li>• Circle generating algorithms.</li> <li>• Ellipse-generating algorithms.</li> <li>• Other curves and Filled-area primitives.</li> <li>• Scan-converting of characters.</li> </ul> <p><b>- Two Dimensional viewing</b></p> <ul style="list-style-type: none"> <li>• A window-to-viewport coordinates transformation.</li> <li>• Studying of clipping operations.</li> <li>• Efficient clipping algorithms for viewing objects such as lines, polygons, curves, and texts.</li> </ul>	
1- Lectures 2- tutorial	٥- اساليب التعليم والتعلم:
The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.	٦- أساليب التعليم والتعلم للطلاب ذوي القدرات المحدودة:
	٧- تقويم الطلاب :
1- Oral Exam. to assess 2- Final Exam to assess 3- Mid-Term Exam to assess 4- Practical Exam to assess	أ- الأساليب المستخدمة:
1- Oral Exam week 16 2- Final Exam week 16 3- Mid-Term Exam week 6 4- Practical Exam week 14	ب- التوقيت :
- Mid-Term Examination 10 - Final-Term Examination 60 - Oral Examination 10 - Practical Examination 20 Total 100%	ج- توزيع الدرجات :
٨- قائمة الكتب الدراسية والمراجع :	
	أ- مذكرات:
1-"Computer graphics," The note book of Academic Staff of Computer Science, Mathematics Department, Faculty of Science, Mansoura University. (2004-2005).	ب- كتب ملزمة :
1-"Computer Graphics C version," Hearn, D. and Baker, M. P., Prentice hall, Upper Saddle River, New Jersey, (1997).	ج- كتب مقترحة :
	د- دوريات علمية أو نشرات..

مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسي

المحتويات للمقرر	أسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
<b>Introductory to computer graphics:</b>					
• Computer graphics and their applications.	1	a1			
• Elements of pictures created in computer graphics.	2	a1	b4		d2
• Interactive graphics system.	3	a2	b4		d2
<b>- Output primitives and scan conversion</b>					
• Algorithms for scan-converting of points and lines.	4	a3	b1	c1,c4	d1,d2
• Circle generating algorithms.	5	a3	b1	c1,c4	d1,d2
• Ellipse-generating algorithms.	6	a3,a5	b1	c1,c4	d1,d2
• Other curves and Filled-area primitives.	7	a3	b1	c1,c4	d1,d2
• Scan-converting of characters.	8	a3,a5	b2	c1	d1,d2
<b>Two Dimensional viewing</b>					
• A window-to-viewport coordinates transformation.	9	a4		c2	d1,d3
• Studying of clipping operations.	10	a4	b4	c2	d1,d3
• Efficient clipping algorithms for viewing objects such as lines, polygons, curves, and texts.	11-12	a4,a5	b3	c2,c4	d1,d2,d3

أستاذ المادة : د/ عبد الحميد فوزى عبد الحميد ابراهيم

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