١ـ بيانات المقرر		
كود المادة : Math 241	اسم المقرر : Computer science 2	المستوى: الثانى
التخصص : رياضيات	عدد الوحدات الدراسية: ٣ ساعة معتمدة نظرى:٢ تمارين: ٠ عملى: ٢	

٢ـ هدف المقرر :	For students undertaking this course, the aims are to: −Understand the basic concepts programming in c++ −Build programs in C++ language −Model problems in basic science using C++ programming −Understand programming algorithms to address proper mathematical problems −Use numerical methods in scientific programming and mathematical modeling
٣ـ المستهدف من تدريس المقرر	
أـ المعلومات و المفاهيم :	**a- Knowledge and Understanding** **On completing this course, students will be able to:** a1 – list computer terms from the textbook, lecture, and readings a2- Acquire an understanding of the fundamental programming concepts such as variables , functions , loops and subroutines in C++ a3 - Identify application algorithm and use programming language a 4 – Read and write programs of real world applications
ب- المهارات الذهنية :	**b- Intellectual Skills** **On completeing the course, the student is will be able to:** b1- Construct programming in C++ b2- Analyze code in C++ and adapt other people's code. b3- Create a detailed algorithmic solution to a well defined problem b4- Design program to solve application problem.
ج- المهارات المهنية الخاصة بالمقرر :	**c-Professional and Practical Skills** **On completing this course, students will be able to:**

c1 – Use language C++ syntax in programming problems c2 – Make programs easy to use in market. c3 - Convert basic programs to equivalent C++ code; c4- Use C++ to develop more reliable programs	
d-General and Transferable Skills **On completing this course, students will be able to:** d1- Solve problems in number systems d2- Work effectively both in a team and independently d3- Exhibit the sense of beauty and neatness d4- Use information and communication technology effectively	د- المهارات العامة:
• Basic compilation of a C++ program & the various "bits" that make up a program. • The Basics of C++:input & output using cin & cout,built in data types such as int, double, char & bool and their relative sizes, The complex number type. • Control statements: if - else & switch. • Loops: for, while & do. • Header files & core C++. • Functions: including call be reference & overloading. • Arrays • C++ mechanism for implementing Object Orientation. • functions. • Mathematical applications	٤- محتوى المقرر :
1- Lecturer 2- Practical tutorial 3- Report	٥- أســـاليـــب التعليـــــم و التعلـم:
The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.	٦- أساليب التعليم و التعلم للطـــلاب ذوى القـدرات المحدودة
	٧- تقويـــــم الطـــــلاب :
1- Oral and Practical exam to assess b1-b4,d1-d4 2- Final exam to assess a1-a4, b1-b4, c1-c4 3- Mid-Term Exam to assess a1-a2, c1-c2 4 - Practical Examination to assess a1-a4, b1-b4, c1-c4	أ- الأساليب المستخدمة
1- Oral and Practical exam week 14	ب- التوقيت

2- Final exam	week	15	
3-Mid-Term Exam	week	7	
4 - Practical Examination	week	14	

ج- توزيع الدرجات	
- Mid-Term Examination 10%	
- Final-Term Examination 60%	
- Oral Examination 10%	
- Practical Examination 20%	
Total 100%	

٨ـ قائمة الكتب الدراسية و المراجع :

أ- المذكرات	- Note the Dept
ب- الكتب ملزمة	B. H. Flowers, An Introduction to Numerical Methods in C++ , Oxford, 2000.
ج- كتب مقترحة	C++ for mathematicians. An introduction for Students and Professionals. ,Edward Scheinerman Bjarne Stroustrup, *The C++ Programming Language, 3rd edition*, Addison-Wesley, 1997
د- دوريــــات علميــــة أو نشرات ... الخ	http://www.mans.edu.eg/facscim/english/ECourses/Default.htm

(أ)   مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسى

المحتويات للمقرر	اسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
Basic compilation of a C++ program & the various "bits" that make up a program.	1-3	a1	b1	c1	d1
The Basics of C++:	4-6	a2	b1	c1,c2	d2
Control statements: if - else & switch.loops: for, while & do.	7-8	a2,a3	b1	c3	d2
Header files & core C++.Functions: including call be reference & overloading.	9	a2,a3	b2	c2	d2
Arrays	10	a2,a4	b3	c3	d3
functions.	11	a2	b4	c4	d3

Mathematical applications	12-14	a2,a3,a4	b4	c4	d4

أستاذ المقرر:أ د / حمدى نبيه عجيزة

رئيس مجلس القسم العلمى : أ.د. مجدى إلياس فارس