

المركزالوطنيللتقويموالاعتمادالأكاديمي

**National Center for Academic Accreditation and Evaluation**

### ATTACHMENT 5.

**T6. COURSE SPECIFICATIONS**

**(CS)**

**Math 699 (Advenced topics in Math)**

**Course Specifications**

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| Institution:**King Saud University** | Date: **13/03/2019** |
| College/Department:**College of Science/ Department of Mathematics.** | |

**A. Course Identification and General Information**

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| 1. Course title and code:**699M Advenced topics in Math** |
| 2. Credit hours:**3** (3+0) |
| 3. Program(s) in which the course is offered:**Ph.D. Mathematics**  (If general elective available in many programs indicate this rather than list programs) |
| 4. Name of faculty member responsible for the course: **Houcine Guediri.** |
| 5. Level/year at which this course is offered: **Eight level/ Last year** |
| 6. Pre-requisites for this course (if any): |
| 7. Co-requisites for this course (if any):**None** |
| 8. Location if not on main campus:  **At Diriya, Main campus: College of Science, Building No. 4; for males**  **At Girls Section for females.** |
| 9. Mode of Instruction (mark all that apply):  a. Traditional classroom What percentage?  b. Blended (traditional and online) What percentage?    c. e-learning What percentage?  d. Correspondence What percentage?  f. Other What percentage?  Comments:None |

**B Objectives**

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| 1. What is the main purpose for this course?  The aim of the course is to enable students to develop, manage and conduct an individual project of research in design innovation; select and apply appropriate methods; analyses and evaluate outcomes; and articulate the process, choosing a suitable format. In particular, the following objectives are :  - Write a research work usingdesirable an organized scientific mode.  - Guide the students to self-learning and training them to come up with objective conclusions.  - Train the students to be self-dependentin collecting the required data through personal efforts.  - Train the student to collect the data from various resources.  - Trainthe student how to write mathematical reports and research.  - Train the student how to present and defend scientific topic in front of anumber of audience. |

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| 2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)  - Choose modern and diversified topics.  - Investigate and analyzing mathematical results.  - Use modern resources depending on information technology.  - Change in the syllabus contents based on the scientific research results.  - Use the data on the internet, using the latest articles in the scientific journals.  - Use of mathematical software programs such as Mathematica and MATLAB. |

**C. Course Description** (Note: General description in the form used in Bulletin or handbook)

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| Course Description: |

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| 1. Topics to be Covered | | | | | | | | | |
| List of Topics | | | | | | No. of  Weeks | | Contact hours | |
|  | | | | | |  | | 6 | |
| 2. Course components (total contact hours and credits per semester): **10 Hours** | | | | | | | | | |
|  | | Lecture | Tutorial | Laboratory/  Studio | Practical | | Other: | | Total |
| Contact  Hours | Planed |  |  |  |  | |  | |  |
| Actual |  |  |  |  | |  | |  |
| Credit | Planed |  |  |  |  | |  | |  |
| Actual |  |  |  |  | |  | |  |

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| 3. Additional private study/learning hours expected for students per week. |

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| 4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy  **For each of the domains of learning shown below indicate:**   * **A brief summary of the knowledge or skill the course is intended to develop;** * **A description of the teaching strategies to be used in the course to develop that knowledge or skill;** * **The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.** |

include learning outcomes from each domain.)

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|  | **NQF Learning Domains**  **And Course Learning Outcomes** | **Course Teaching**  **Strategies** | **Course Assessment**  **Methods** |
| **1.0** | **Knowledge** | | |
| 1.1 | Define a particular subject under supervision of staff member. | -Self -study.  -Weekly meeting with the supervisor to discuss completed parts.  -Training the students to write scientific research. | -Evaluation of the supervisor of the homework and giving remarks.  -Evaluation of the research progress.  -Presentation of written copy to one of the staff-member for evaluation and discussion with the student at the end of the term.  -Presentation of the research in front of a group of staff-members in special meeting for this purpose.  -Evaluation and giving a achieved marks to the students |
| 1.2 | Collect data from different sources. |
| 1.3 | Write, state and present a topic in scientific subject. |
| 1.4 | List some methods and instruments of scientific research. |
| 1.5 | Use analytic programs related to research topic. |
| **2.0** | **Cognitive Skills** | | |
| 2.1 | Analyze and reach results and conclusions. | -Guidance and follow up through periodical meeting with the supervisor.  -Self-study through solving drills and practical problems related to the research topic.  -Oral presentation of the research topic throughout the term. | -Investigating and checking the home work and giving remarks to be included in the research to raise the quality of the performance.  -Oral discussion and guidance to improve the performance.  -Comprehensive evaluation of the performance from the supervisor. |
| 2.2 | Scientific study to identify special results. |
| 2.3 | Compare and reaching results. |
| 2.4 | Use references |
| 2.5 | Explain students to a quire fast reading skills and to conduct and reach the information and employ them to serve the research. |
| **3.0** | **Interpersonal Skills & Responsibility** | | |
| 3.1 | Work independently depending on one self. Cooperation skills and team work in case the project is conducting by more than one student. | -Writing of mathematical reports in scientific methodology.  -Researching for data from different sources.  -Discussion of homework and how to use them to support the topic.  -Presentation of comprehensive research in front of a group of specialists. | -Follow up of research progress through weekly meeting with the supervisor.  -Evaluation of the home works partially and in totality.  -Evaluation of the comprehensive work at the end of the term. |
| 3.2 | Demonstrate team work spirit and group work. |
| 3.3 | Develop discussion skills and how to share and communicate the data with other. |
| 3.4 | Show others the students efforts during the term by presentation and explanations  on scientific bases to convince others. |
| **4.0** | **Communication, Information Technology, Numerical** | | |
| 4.1 | Use of computer skills and simple programs. | -Making up the calculations to reach and write the conclusion through using mathematical programs by using the available resources in the department and library and the computer laboratories. | -Evaluation of the arithmetic homework's through using the computers and related programs in the computer lab in practical mathematics and comparing them with obvious results and other similar results. |
| 4.2 | Use the internet in the practical research. |
| **5.0** | **Psychomotor** | | |
| 5.1 | None |  |  |

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| 5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.) | | | | | | | | | | | | | | | |
| **Course**  **LOs #** | **Program Learning Outcomes**  **(Use Program LO Code #s provided in the Program Specifications)** | | | | | | | | | | | | | | |
| **1.1** | **1.2** | **1.3** | **1.4** | **2.1** | **2.2** | **2.3** | **2.4** | **3.1** | **3.2** | **3.3** | **3.4** | **4.1** | **4.2** | **4.3** |
| **1.1** | ✓ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **1.2** |  | ✓ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **1.3** |  | ✓ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **1.4** |  |  |  | ✓ |  |  |  |  |  |  |  |  |  |  |  |
| **2.1** |  |  |  |  |  | ✓ |  |  |  |  |  |  |  |  |  |
| **2.2** |  |  |  |  |  | ✓ |  |  |  |  |  |  |  |  |  |
| **2.3** |  |  |  |  |  |  | ✓ |  |  |  |  |  |  |  |  |
| **2.4** |  |  |  |  | ✓ |  |  |  |  |  |  |  |  |  |  |
| **2.5** |  |  |  |  |  |  |  | ✓ |  |  |  |  |  |  |  |
| **3.1** |  |  |  |  |  |  |  |  | ✓ |  |  |  |  |  |  |
| **3.2** |  |  |  |  |  |  |  |  |  | ✓ |  |  |  |  |  |
| **3.3** |  |  |  |  |  |  |  |  |  |  | ✓ |  |  |  |  |
| **3.4** |  |  |  |  |  |  |  |  |  |  |  | ✓ |  |  |  |
| **4.1** |  |  |  |  |  |  |  |  |  |  |  |  | ✓ |  |  |
| **4.2** |  |  |  |  |  |  |  |  |  |  |  |  |  | ✓ |  |
| **4.3** |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ✓ |
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**D. Student Academic Counseling and Support**

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| 1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)  - 10 scheduled office hours per week.  - 5 hours weekly for academic advice through the academic guidance unit in the department.  - 3 hours weekly meeting with the supervisor. |

**E Learning Resources**

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| 1. List Required Textbooks  - Selected books depending on subject.  - An article from a periodical journal.  - Selected researches results from international conferences. |
| 2. List Essential References Materials (Journals, Reports, etc.)  References and journals related to the subject available in the main library. |
| 3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.  - Websites on the internet that are relevant to subject of the course.  - Mathematics journals website: science direct.  - Instructors website.  - Other internet periodical. |
| 4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.  Faculty websites.  - Related association magazines.  - Matlab, Mathematica, Scientific Workplace, Microsoft Office. |

**F. Facilities Required**

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| Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access,etc.) |
| 1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)  Lecture room equipped with blackboard and data show.  - Computer laboratory. |
| 2. Technology resources (AV, data show, Smart Board, software, etc.)  **-** Computers equipped with suitable software. |
| 3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)  - Printers connected to the computers with the supervisor and student to exchange the data of the research. |

**G Course Evaluation and Improvement Processes**

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| 1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching   * Course evaluation by student at the end of the semester. |
| 2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department   * Analyzing the students evaluation. * Peer consultation on teaching. * Departmental council discussions. * Supervisors observations |
| 3. Processes for Improvement of Teaching   * Workshops conducted by the deanship of skills developments. * Using different references and subjects. * Encouraging the student to search for other references from other scientific journal related to the topic. |
| 4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)  - Evaluation of the project by a group of faculty members in the final session.  - Exchange and correction of the homework between the supervisors for the same subject.  - Discussion of the results from one staff member from other department. |
| 5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.   * Periodic revision of contents and conclusions of previous projects every two years. * Update the contents and conclusions according to the ability of the student. * Involving more faculty members from different specialties in the supervision process. * Contribution of all staff- members from different specialties to evaluate the contents of the subject. |

Name of Course Instructor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date Specification Completed: \_\_\_\_\_\_\_\_\_\_\_\_

Program Coordinator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date Received:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_