مواصفات خريج برنامج الحسابات العلمية طبقاً للمعايير الأكاديمية القومية

The graduates of Scientific Computing program should be able to:

1. Apply the fundamental theories and principles of computing and information applications.
2. Integrate and evaluate the computing tools and facilities.
3. Apply knowledge of mathematics and science.
4. Design a computing system, component and process to meet the required needs within realistic constraints.
5. Exploit the techniques, skills and up-to-date computing tools, necessary for computing and information practice.
6. Display professional responsibilities and ethical, societal and cultural concerns
7. Use, compare and evaluate a range of formal and informal techniques, theories and methods to develop computing and information applications.
8. Consider and deal with the individual, social, environmental, organizational and economic implications of the application of computing and information.
9. Carry out a work plan with minimal supervision.
10. Communicate effectively.
11. Hold knowledge and skills required by the computing and information industry.
12. Engage in self and life-long learning and research in computing and information.
13. Fulfill requirements of potential employers.
14. Formulate simple mathematical models of physical systems in terms of algebraic and differential equations, starting from a rough description of the problem.
15. Select or develop a suitable numerical method to obtain quantitative estimates of important parameters in the mathematical models.
16. Implement the numerical method in a programming language and obtain estimates of the parameters of interest.

17. Use high performance computing resources whenever needed to solve large-scale problems.
18. Use symbolic computing tools to develop approximate and closed form solutions.
19. Interpret results and assess the different mathematical models.
20. Deal with scientific databases.
21. Select and use the appropriate visualization technique for visualizing numerical data.
22. Report the results of analysis and the interpretation of those results in a suitable (written text or graphical) form.
23. Continue to learn and be able to read mathematical modeling, computing and numerical methods literature with a view to using new ideas in future scientific computing problems.

منسق المعيار

عميد الكلية

د. هالة حلمي