The Graduate Certificate in Software Engineering, Analysis and Design
Entirely Online or In Class

Department of Engineering Technology
Newark College of Engineering

New Jersey Institute of Technology
2015
WHY PURSUE A GRADUATE CERTIFICATE IN SOFTWARE ENGINEERING, ANALYSIS AND DESIGN?
Software engineering is the disciplined application of computer science knowledge to the analysis, design, development, evaluation and evolution of software products. Because software pervades economic and personal activity worldwide and because it is increasingly being used in critical applications, the software industry is under intense pressure to deliver quality software. Because software production remains a labor intensive activity, the demand for large volumes of high quality software translates into high demand for qualified software engineers.

WHY STUDY SOFTWARE ENGINEERING, ANALYSIS AND DESIGN AT NJIT?
The Commissioner of Bureau of Labor Statistics in a testimony before a sub-committee in U.S. House of Representatives on March 25, 2009, reported that in his assessment on long-term employment trends through *2016 and in spite of the current economic climate, the occupation Computer Software Engineers, Applications Software is expected to have the 2nd highest growth (45% with 2006 median annual wage of $79,780) out of the 30 occupations with the fastest growth. Combined with the data for Computer Software Engineers, Systems Software (28% growth with 2006 median annual wage of $85,370), Computer Software Engineering overall is expected to have the largest opportunity for employment in US among the 30 high-growth occupations.

WHAT COURSES ARE OFFERED?
Select two (2) or three (3) based on above choice from:
CS 673:    Software Design and Production
IS 663:    System Analysis and Design*
CS 631:    Software Testing and Quality Assurance
CS 683:    Software Management*
CS 684:    Software Project Management
IS 676:    Requirements Engineering*
CS 631:    Enterprise Database Management*
CS 633:    Data Management System Design*
CS 673:    Software Design and Production Methodology*
IS 664:    System Analysis and Design*
IS 665:    Information Systems Management*

Select at least one (1) of the below two (2) courses:
IS 665:    Information Systems Management*
IS 666:    Enterprise Database Management*

WHAT DO I GET?
Key software engineering principles, methods and frameworks, including process models, agile and lean principles, project and risk management, estimation, modeling, system and software architecture, design patterns, and quality systems.

Hands-on experience in managing database systems as an essential organizational resource.

Development of large software systems and the integration of multiple systems into a domain dependent solution.

Modern techniques and methods employed in the development of large software systems, including a study of each of the major activities during the lifetime of a software system, from conception to obsolescence and replacement.

Software management technique, various software costing techniques including COCOMO and ROI, team organization and management, and various methods of software development including Cleanroom and Agile.

WHAT WILL I LEARN?
- Required: √ Select at least one (1) of the below two (2) courses:
  IS 663:    System Analysis and Design*
  CS 673:    Software Design and Production Methodology*
- Select two (2) or three (3) based on above choice from:
  IS 631:    Enterprise Database Management*
  CS 631:    Data Management System Design*
  IS 676:    Requirements Engineering*
  CS 683:    Software Project Management
  CS 684:    Software Testing and Quality Assurance

Complete course descriptions can be found in the NJIT Online Catalog at http://catalog.njit.edu/graduate.

*Now or shortly available online. Courses are subject to change. √ Take care to select courses in proper order. Check course descriptions, because they state if one course must be taken before (i.e.; is a prerequisite to) another.

WHERE ARE THE CLASSES OFFERED?
The full credential can be studied online and at NJIT’s Newark campus. Customized NJIT degrees and academic certificates can be brought on-site to your company or customized and conducted at a location convenient to a consortium of companies.

IS FINANCIAL AID AVAILABLE EVEN FOR PART-TIME STUDENTS?
Yes, sources of financial aid or tax credits are available at: http://adultlearner.njit.edu/costs.

WHAT IS THE TUITION FOR GRADUATE COURSES?
Use the tuition calculator to see full costs, and the fuel saving calculator to figure how much gas money is saved by studying online, visit: http://adultlearner.njit.edu/costs.


CAN THE GRADUATE CERTIFICATE BE APPLIED TO AN ADVANCED DEGREE?
Courses in the Graduate Certificate program in Global Technology Management can be wholly applied to NJIT’s MS in Information Systems, or MS in Business and Information Systems, or MS in Software Engineering based on which courses are chosen.

HOW DOES THE GRADUATE CERTIFICATE PROGRAM WORK?
In any given year, NJIT offers a new slate of Graduate Certificates, each in a specific area which is in a fast growing and employable profession. Each stand-alone credential is a milestone in its own right and can be a 12-credit springboard to a matching Masters Degree program at NJIT or elsewhere. The credential can be completed in as little as one academic year of part time study. Many can be studied in whole or in part online. The straightforward and rapid admissions process requires possession of an undergraduate degree with a satisfactory grade point average. A GRE or GMAT score is not a prerequisite. Depending on the program, courses can be taken online, on campus, or at NJIT extension sites around New Jersey. For a complete list of available Graduate Certificates, please visit http://www.njit.edu/gradcert.

BRINGING A GRADUATE CERTIFICATE TO YOUR COMPANY
Arrangements can be made to bring a Graduate Certificate or Master’s program on-site to your company. A customized Graduate Certificate can also be offered to match your company’s area of technological and managerial specialty. For more information about Company Collaborative Graduate Certificates or enrollment in any of our Graduate Certificate, please contact Continuing Professional Education.

FOR FURTHER INFORMATION:
Division of Continuing Professional Education
1-800-624-9850 (Toll Free)
1-973-596-3060 (New Jersey)
Email: cpe@njit.edu

ON THE WEB:

APPLY ONLINE:
http://adultlearner.njit.edu/admissions