BS in Computer Science – Curriculum Map EY 2019

Program Outcomes:

1. Identify, use, design, develop and analyze appropriate abstractions and algorithms to solve problems while being able to prove the algorithm's performance and correctness across a variety of metrics (e.g., time, space, parallel vs. sequential implementation, computability).
2. Implement solutions to problems in domains such as artificial intelligence, graphics and sound, software engineering, and human-computer interaction, by applying the fundamentals of those areas to create solutions to current problems while being exposed to research developments that will enable them to adapt as the technology changes.
3. Reason about and implement programs in various programming languages and paradigms.
4. Describe, specify, and develop large-scale, open-ended software systems subject to constraints such as performance and/or resource issues.
5. Build and analyze program, algorithms and systems using core mathematical principles from calculus, discrete mathematics, number theory, matrix algebra, and probability.
6. Communicate technical material effectively to technical and non-technical audiences.
7. Work both individually and in teams.
8. Recognize the social impact of computing and the attendant responsibility to consider the legal, moral and ethical implications of computing technologies.

Program Requirements	Program Outcomes							
	1	2	3	4	5	6	7	8
07-128 First Year Immigration						•	•	•
15-122 Imperative Computation	•		•		•			
15-150 Functional Programming	•		•		•			
15-151 Math Foundations of CS	•				•			
15-210 Parallel/Seq. Algo./Structs.	•		•		•			
15-213 Computer Systems	•		•	•				
15-251 Great Theoretical Ideas/CS	•				•		•	
15-451 Design/Analysis Algorithms	•				•	•	•	
Logics & Languages Elective			•		•			
Computer Systems Elective				•			•	
Artificial Intelligence Elective		•			•			
Domains Elective		•			•			
2 SCS Electives*	•	•	•	•	•	•	•	•
Technical Communications Elective						•	•	•
21-122 Integration/Approximation					•			
21-259 Calculus in 3D					•			
21-241/242 Matrix Algebra/Theory					•			
Probability Elective					•			
CONCENTRATION OR MINOR*	•	•	•	•	•	•	•	•
First Year Writing						•		
Cognition, Choice & Behavior						•		•
Economic, Political & Social Inst.						•		•
Cultural Analysis						•		•
3 Humanities/Arts Electives						•	•	•
3 Science/Engineering Electives						•		
1 Laboratory Elective							•	
Computing @ Carnegie Mellon								•

Color Key - General Education Requirements: HUMANITIES/ARTS SCIENCE/ENGINEERING CMU

***Program Outcome coverage depends on selection of courses.**