Computer Science MS program  
Degree Requirements Check Sheet  
(*Fall 15 – Spring 18*)

Name: __________________________ ID: 800____________ First semester of enrollment: ( ) Spring ( ) Fall 20____

General requirements:

- 30 graduate credit hours, which may optionally include 6 hours of thesis, with GPA at least 3.0.
- At least 18 hours must be from the Department of Computer Science.
- At least 24 hours must be from the College of Computing and Informatics.
- At least 15 hours must be 6000 level or above courses.
- A maximum of 6 hours of graduate credit may be transferred from other institutions.

Core subject requirements:

All students must take THREE courses from the Core Category.

The following two courses are required:  
ITCS 6112 Software System Design and Implementation  
ITCS 6114 Algorithms & Data Structures

The third course may be selected from:  
ITCS 5102 Survey of Programming Languages  
ITCS 6182 Computer System Architecture

The three courses taken to satisfy the core requirement must each be passed with an “A” or a “B” grade.

Breadth requirements:

All students must take three courses, each from a different Course Category, to satisfy the breadth requirements. The courses must be listed below. The course categories are:

**Data Science and Management**
ITCS 6100 Big Data Analytics for Competitive Advantage
ITCS 6155 Knowledge Based Systems
ITCS 6157 Visual Databases
ITCS 6160 Database Systems
ITCS 6161 Advanced Topics in Database Systems
ITCS 6162 Knowledge Discovery in Databases
ITCS 6163 Data Warehousing
ITCS 6190 Cloud Computing for Data Analysis
ITCS 6265 Advanced Topics in Knowledge Discovery in Databases

**Networked Systems**
ITCS 5145 Parallel Computing
ITCS 5146 Grid Computing
ITCS 6132 Modeling & Analysis of Communication Networks
ITCS 6166 Computer Networks
ITCS 6167 Advanced Networking Protocols
ITCS 6168 Wireless Communications
Visualization and Computer Graphics
ITCS 5121 Information Visualization
ITCS 5122 Visual Analytics
ITCS 5123 Visualization and Visual Communication
ITCS 6120 Computer Graphics
ITCS 6124 Illustrative Visualization
ITCS 6126 Large Scale Information Visualization
ITCS 6127 Real-time Rendering Engines
ITCS 6128 3D Display and Advanced Interfaces
ITCS 6140 Data Visualization

Intelligent & Interactive Systems
ITCS 5152 Computer Vision
ITCS 6050 Topics in Intelligent Systems
ITCS 6111 Evolutionary Computation
ITCS 6125 Virtual Environments
ITCS 6134 Digital Image Processing
ITCS 6150 Intelligent Systems
ITCS 6151 Intelligent Robotics
ITCS 6152 Robot Motion Planning
ITCS 6156 Machine Learning
ITCS 6158 Natural Language Processing
ITCS 6267 Intelligent Information Retrieval
ITCS 6500 Complex Adaptive Systems

Applications
ITCS 5133 Numerical Computation Methods and Analysis
ITCS 5180 Mobile Application Development
ITCS 5230 Introduction to Game Design and Development
ITCS 5231 Advanced Game Design and Development
ITCS 5232 Game Design and Development Studio
ITCS 5235 Game Engine Construction
ITCS 5236 Artificial Intelligence for Computer Games
ITCS 5237 Audio Processing for Entertainment Computing
ITCS 6153 Neural Networks
ITCS 6159 Intelligent Tutoring Systems
ITCS 6165 Coding and Information Theory
ITCS 6222 Biomedical Signal Processing
ITCS 6224 Biomedical Image Processing
ITCS 6226 Bioinformatics
ITCS 6228 Medical Informatics

Information Security and Privacy
ITIS 5221 Secure Web Application Development
ITIS 5250 Computer Forensics
ITIS 6140 Software Testing and Quality Assurance
ITIS 6150 Software Assurance
ITIS 6167 Network and Information Security
ITIS 6200 Principles of Information Security and Privacy (required for the security concentration)

ITIS 6210 Access Control and Security Architecture
ITIS 6220 Data Privacy
ITIS 6230 Information Infrastructure Protection
ITIS 6240 Applied Cryptography
ITIS 6250 Open Source Security Systems
ITIS 6362 Information Technology Ethics, Policy, and Security
ITIS 6420 Usable Security and Privacy
Concentration:

All students must form a concentration - three related courses (9 hours) approved by the advisor, at least two must be ITCS courses except for Information Security and Privacy concentration. One course used for a breadth requirement can also be used for the concentration. Six hours of thesis can be used towards the concentration requirement.

Area: ____________________________________________

Courses:
_________________________________________________
_________________________________________________
_________________________________________________

The three courses taken to satisfy the concentration requirement must each be passed with an “A” grade or a “B” grade. In addition, a written study report on a subject in the area must be submitted to and be approved by the academic advisor to complete the concentration requirement.

Written Study Report Title: ____________________________________________

Electives to complete 30 hours:
_________________________________________________
_________________________________________________

Student Signature: ____________________________ Date: ______________

Academic Advisor Signature: ____________________________ Date: ______________