

**Ph.D. IN COMPUTER SCIENCE WORKSHEET  
DATA SCIENCE AND ANALYTICS CONCENTRATION**

Name: \_\_\_\_\_ Z#: \_\_\_\_\_ Date of Candidacy Exam Passed : \_\_\_\_\_

Dissertation Advisor (Chair) : \_\_\_\_\_ Co-Chair : \_\_\_\_\_

**Committee:**

Member 1 : \_\_\_\_\_ Member 2 : \_\_\_\_\_ Member 3 : \_\_\_\_\_

Member 4 : \_\_\_\_\_ Member 5 : \_\_\_\_\_ Member 6 : \_\_\_\_\_

When did you submit Admission for Candidacy (Form 8) , Semester: \_\_\_\_\_

Anticipated Date of your PhD proposal presentation : \_\_\_\_\_

**Students are encouraged to submit their dissertation proposal as early as possible in consultation with their advisor but must do so at least six months prior to their defense.**

Date: \_\_\_\_\_

**Prerequisites**

List deficiency courses assigned by the Admission Committee, if applicable:

Course Number Title	Semester Taken	Grade

**MS to PhD Requirements  
(Minimum of 72 credit hours total)  
For students entering with a Master's Degree**

Master's Credits (minimum 30):

Course Number Title	Semester Taken	Grade

**Graduate Courses (18 credits):**

Minimum of 12 credits must be Computer Science and Engineering courses. A minimum of 9 credits of 6000-level. No more than 3 credits of Directed Independent Study or Advanced Research may be used, and the subject may not overlap the student's dissertation. Mandatory to take two semesters of Graduate Seminar (zero credits).

Course Number Title	Semester Taken	Grade
CGS 5937 Graduate Seminar 1 (Mandatory, 0 credits)		
CGS 6938 Graduate Seminar 2 (Mandatory, 0 credits)		

**Computer Science Dissertation Credit Courses: COT 7980 (Minimum of 24 credits taken over multiple terms):**

Course Number Title	Semester Taken	Grade
COT 7980 Dissertation Computer Science		

**Computer Science Directed Independent Study: COT 6900 OR Advanced Research: EGN 6918 (No more than 3 crs)**

Course Number Title	Semester Taken	Grade

## Data Science and Analytics Courses

Course Number/Name
CAP 5768 Introduction to Data Science
CAP 5615 Introduction to Neural Networks
CAP 6315 Social Networks and Big Data Analytics
CAP 6546 Data Mining for Bioinformatics
CAP 6673 Data Mining and Machine Learning
CAP 6776 Information Retrieval
CAP 6640 Natural Language Processing
CAP 6617 Sparse Learning
CAP 6777 Web Mining
CAP 6778 Advanced Data Mining and Machine Learning
CAP 6618 Machine Learning for Computer Vision
CAP 6780 Big Data Analytics with Hadoop
CEN 6405 Computer Performance Modeling
CAP 6619 Deep Learning
CAP 6635 Artificial Intelligence

# All PhD Students

\* PhD proposal must be presented and approved by the committee at least 6 months before the oral dissertation defense.

## Publication Requirement

A Doctoral Candidate is expected to have at least one research paper published or accepted for publication in a fully refereed conference or journal prior to graduation.

## Layout and Content of “Dissertation Proposal”

This document provides general guidelines for the layout and content of the dissertation proposal. The guidelines may be modified to suit the project and the student’s advisor may require additional material to be added to the proposal. The purpose of this document is to provide a starting point from which the final proposal can be developed.

### Format

The dissertation proposal should be written using MS word or LaTeX. Please use the layout below and number each section accordingly.

### Cover Page

The proposal cover page should include

- Title (up to 25 words) - The title can be a working title in that it can be changed at a later date. It should convey the essence of the proposed work.
- Student Name
- The statement Dissertation Proposal submitted in partial fulfillment of a Doctoral Degree in Computer and Electrical Engineering and Computer Science.
- Date
- Names and room for signature of the student’s advisor and advisory committee.

### Content

The dissertation proposal should include the following sections:

1. **Introduction** - Gives the background to the work in general terms and the layout of the document.
2. **Dissertation Objective** - A statement, which is less than half a page long, specifying the objective of the work.
3. **Literature Review** - Reviews the pertinent literature with the objective of placing the research in the context of work that has been done before. Having read this section, the committee will have a clear understanding of how the dissertation will provide new insights and advance the state of the art. A dissertation proposal must clearly identify the uniqueness of the study.
4. **Approach** - Describes the theoretical, experimental, or numerical approach that will be used in the study, including the background theory where necessary. The derivation of major equations can be added in an appendix if required by the student’s supervisor.
5. **Tasks to be completed** - This should describe the expected series of tasks that will be undertaken during the study.
6. **Timetable** - Defines the timeline for the completion of the work.
7. **References** - A list of references should be provided in an appropriate academic format such as Harvard or Author-Date.
8. **Figures and Tables** - Figures and tables may be placed in the document or at the end of the document. Each figure and table should be numbered in the order that it is referred to in the text and have a caption/heading that describes the content of the figure/table.