

# **Analytics Applications Using R**

## **IDS 594 – 21345**

### **Summer 2017**

**Grant Hall 205**

#### **Instructor**

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#### **Course Objectives**

By the end of this class you should be able to use R to develop Data Science related applications to solve real life business problems.

#### **Course Topics**

Preprocessing - EDA, feature selection and extraction  
Dimensionality reduction – PCA, SVD, shrinkage methods (ridge, lasso)  
Modelling - LDA, QDA, RF, GBM, KNN, NN  
Model selection and evaluation – parameter search, cross validation, validation curves  
Interactive visualization with googleVis / plotly  
R package development  
Documentation with R Markdown  
Dashboard development with flexdashboard  
Web development with shiny and R Markdown Websites

#### **Course Requirements**

A laptop is required with the following software installed:

- RStudio (<https://www.rstudio.com/>)
- MRO (<https://mran.microsoft.com/documents/rro/installation/>)

#### **Recommended**

- SQL Server Express Edition (engine + management studio)
  - o <https://www.microsoft.com/en-us/sql-server/sql-server-downloads>
- Notepad++ (<https://notepad-plus-plus.org/>)

#### **Tentative Schedule**

<b>Date</b>	<b>Description</b>	<b>Test</b>
Tuesday 5/16	SQL Server / preprocessing	
Thursday 5/18	Creating a predictive ML model	Test #1
Tuesday 5/25	Creating a predictive ML model	
Thursday 5/27	Data visualization	Test #2
Tuesday 6/2	Data visualization	
Thursday 6/4	Documentation	Test #3
Tuesday 6/6	Dashboard development	
Thursday 6/8	R package development	Test #4

#### **Grading Plan**

Attendance	60%
Tests	40%

#### **Attendance Policy**

Attendance is a crucial element of this course and constitute the largest part of the grade. Absences should be justified and/or are subject to the grading policy described above.

### **Disability Resource Center**

If you want to register for services at the Disability Resource Center, first call and schedule an intake appointment (312-413-2183). Second, fill out this [confidential online form](#) in preparation for your meeting with your Disability Specialist. You will need your UIC Net ID and password to fill out this online form.