RUTGERS

School of Communication and Information
Problem Solving with Data
MI 562 Spring 2017 On-campus
Wednesday 3:10-5:50pm Room 337

[Note: you should treat this document as "in process" as different parts of it may change during the semester. All the changes will be communicated in the class and/or through email.]

Course Delivery:	On campus
Course Website:	http://comminfo.rutgers.edu/~chirags/teaching/2017_spring/MI562-01
Instructor:	Chirag Shah
Email:	chirags@rutgers.edu
	(24-hour turnaround on email correspondence)
Office:	*Room 302 in SC&I*
Office Phone:	*848-932-8807*
Office Hours:	2-3pm on Wednesday, or by appointment
Instructional Asst:	Soumik Mandal
Email:	sm1828@scarletmail.rutgers.edu
	(24-hour turnaround on email correspondence)
Office:	*InfoSeeking Lab (room 303) in SC&I*
Office Phone:	*848-932-8763*
Office Hours:	By appointment

Catalog Description

This course offers students a practical introduction to the field of "Data Science," and common methods for quantitative and computational analytics, through which they can have an overview of key concepts, skills, and technologies used by data scientists. While the course covers several programming languages and tools, the focus is on solving problems. The students will be introduced to several real-life problems that involve collecting and analyzing data.

Course Description

As a constant flux of rapidly growing amounts of data is created and used in industries and research environments, there is an increasing demand for individuals and professionals who are able to pursue data-driven thinking and decision-making using meaningful insight derived from large and diverse data. This course offers students a practical introduction to the field of

"Data Science," and common methods for quantitative and computational analytics, through which they can have an overview of key concepts, skills, and technologies used by data scientists. While the course covers several programming languages and tools, the focus is on solving problems or "hacking". "Hacking", in this context, refers to being able to find ways to address a problem with anything and everything available to one's disposal. The students will be introduced to several real-life problems that involve collecting and analyzing data, and it is in this context of solving problems that an appropriate set of tools and programming languages, including Python, PHP, R, and MySQL, will be taught.

Pre- and Co-requisites

Previous exposure to a technology course or training, including a beginner level understanding of any programming language, is required. Courses that fulfill such requirements are 17:610:550, 01:198:113, 01:198:211, and 04:547:202. Only one of such courses is required. An exception may be made for a student who could demonstrate technical readiness through some other method, including a technology course taken elsewhere or industry experience. Consult with the course instructor for further information.

Learning Objectives

By the end of the course, students will be able to:

1. Apply programming languages and tools, such as UNIX commands, MySQL, Python, and R, to collect, clean, process, and analyze data.
2. Exhibit familiarity with data science methods by learning and experiencing essential algorithms and approaches.
3. Use statistical methods and visualization techniques to explore and analyze data, and visualize and present the results.
4. Identify data-driven analytics problems, and design solutions and applications to solve them.

Instructional Method

This course is about collecting, formatting, and analyzing data to derive important insights about a problem at hand. We will be looking for meaningful patterns in our data in order to find relations among variables of interest, and make predictions. To do so, we will need various programming, database, and statistical tools. At the same time, this course is not meant to provide anyone mastery of those tools. It is expected that the students have at least a basic understanding of them, but appropriate attempts will be made during the course to provide introductions to such tools. To that end the course will be taught as a mixture of lecture, discussion and lab, in an effort to provide an accelerated path to experience. Students will work individually as well as in teams. Occasionally, individuals and teams will swap code, in order to understand the utility of writing clear code and the challenge of working with code written by others. The first half of the course will focus on learning and practicing the platform (UNIX), the database (MySQL), and the coding tools (Python, R). The second half of the course will focus on solving various data science problems using the tools learned in the first part of the

course. The course will also teach working with different project development environments such as SVN and Trello.

Major Readings

There is no textbook for this course. The instructor will provide a companion ebook for free. There are several online articles that the students will be recommended to read. These links will be provided through the course website.

Online Course Shell/Site

The course has a website at http://comminfo.rutgers.edu/~chirags/teaching/2017_spring/MI562-01. Use the website to learn about the most updated schedule, reading materials, and assignments. The actual assignments will be available from and submitted through Sakai, unless instructed otherwise.

If you need help with accessing or using Sakai site for this course, please contact Sakai helpdesk: 848-445-8721 (Mon-Fri 8am-6pm) or at sakai@rutgers.edu

Methods of Assessment and Grading

The content of this course is best understood by assimilating the lectures, by readings, by analyzing examples and by practice. The assessment for this course is based on a series of assignments that match the real-world process and on class participation. Assignments are of two types: smaller exercises and a multi-part course project. Descriptions of the assignments are available on the course website. There will also be exercises that are not graded - in all cases, you will later use the same techniques/methods as a part of your project. Class participation includes participation in discussions; reading descriptions.

The final grade will be weighted based on the following: Assignments: 45%, Mid-term project: 20%, Final project: 30%, Class participation: 5%. What you get out of 100% is then translated to a letter grade as indicated below, which also provides interpretations of those grades.

- A (91-100%): Outstanding and excellent work of the highest standard, mastery of the topic, evidence of clear thinking, good writing, work submitted on time, well organized and polished.
- B+ (85-90%:) Very good work, substantially better than the minimum standard, very good knowledge of the topic; error free.
- B (80-84%): Good work, better than the minimum standard, good knowledge of the topic.
- C+ (74-79%): Minimum standard work, adequate knowledge of the topic.
- C (70-73%): Work barely meeting the minimum standard, barely adequate knowledge of the topic; errors.
- D (65-69%): Writing not up to standard, disorganized, many errors
- F (< 65%): Unacceptable, inadequate work
- T: Temporary.

Key Assignments

This is a practice-oriented course. That means most of the assignments (homework, in-class, exams) will be based on tackling real-life problems and applying skills learned in the class. The classes and assignments directly relate to the learning objectives (LO). Specifically,

- LO-1 is associated with units 1-6 and unit 8, which cover UNIX, MySQL, Python, and R.
- LO-2 corresponds to units 9 to 13, in which three practical problems are explored, as well as units 1-6 and 8.
- LO-3 specifically refers to statistical methods and visualization techniques in Python and R packages, which will be introduced both general language section (units 1-6) and practices (units 9-13).
- LO-4 will be met through the mid-term and the final projects.
- The weekly assignments will address LO 1-3.

Weekly assignments (45%): The course will have weekly assignments – given with each class. The assignment will typically be an extension of what is covered during that week. In other words, a typical assignment will ask to take what was taught and practiced during the class and take it a few steps further. One can expect to spend roughly 5-8 hours a week to work on an assignment.

Mid-term project (20%): The mid-term exam will take place during the 7th week (see the course calendar). It will be open-book exam, which means you can use any and all resources you like, including online. You will be given the exam during the class, but you will have until that Friday to finish it. If you have to miss that particular class, contact the instructor to find an alternative time and place for you to start the mid-term.

Structure:
This will be a problem-solving exam. You will be asked to solve the given problem using the languages and methods covered so far. They include Python, R, and UNIX. In other words, the procedures of the problem solving will need some form of data collecting, manipulation, analysis, and visualization (done with Python and R).

You can use existing pieces of code under the following conditions:
(1) There should be at least 30% new code in your project;
(2) Any code from somewhere (including your own work) has to be attributed properly.

Time: You will be given 2 days starting the class.

Grading: The exam (project) will be worth 100 points and will be graded according to the following rubric.
-   Correctness of the outcome: 20
-   Setup of the database and data processing: 10

- Proper coding with Python: 15
- Proper coding with R: 15
- Error-checking in the code: 10
- Explanation of the processes and results: 10
- Internal documentation: 10
- External documentation: 10

Final project (30%): The final project will be done in individual (or team). After mid-term exam, you will be given time to find topic of interest with writing a brief proposal, then you will do presentation of the project with written report.

Possible topics/ideas:
- Movie revenue prediction
- Predicting the winners of Oscars for each category
- Predicting the winners of Golden Globe awards for each category
- Evaluating the chances of various NBA teams for winning a bracket
- Predicting election results
- Weather forecast
- Creating a rank-list for Man of the Year (Time magazine)
- Stock market (closing prices of each index/stock on x/xx)

Structure:
After the mid-term, you will be asked to create a small group (2-4 in size) in the class. Each group will be given a new problem solving assignment that they will complete in about four weeks time. The group will be expected to deliver two outcomes: project presentation to be done during the last class, and a project report, along with program code and supporting material to be submitted by May 5th.

You can use existing pieces of code under the following conditions:
(1) There should be at least 30% new code in your project;
(2) Any code from somewhere (including your own work) has to be attributed properly.

Time: You will be given approximately 4 weeks.

Grading: The project will be worth 100 points and will be graded according to the following rubric.
- Practicality of the topic to the phenomena in society, technology, and business area: 20
- Comprehensiveness of data processing and computation: 20
- Proper algorithm and methods: 20
- Proper error-checking in the code: 10
- Internal documentation: 10
- External documentation: 10
- Class presentation: 10

Class Attendance/Participation Rubric

Criteria	Unsatisfactory-Beginning	Developing	Accomplished	Exemplary	Total
	0-16 points	**17-19 points**	**20-22 points**	**23-25 points**	**/25**
Attendance	3 or more unexcused absences	2 unexcused absences	1 unexcused absence	Attended all class sessions or received approval for all necessary absences	
	0-16 points	**17-19 points**	**20-22 points**	**23-25 points**	**/25**
Frequency	Student does not initiate contribution & needs instructor to solicit input.	Student initiates contribution at least in half of the class sessions	Student initiates contribution once in each recitation.	Student initiates contributions more than once in each class session.	
	0-16 points	**17-19 points**	**20-22 points**	**23-25 points**	**/25**
Quality	Comments are uninformative, lacking in appropriate terminology. Heavy reliance on opinion & personal taste, e.g., "I love it", "I hate it", "It's bad" etc.	Comments are sometimes constructive, with occasional signs of insight. Student does not use appropriate terminology; comments not always relevant to the discussion.	Comments mostly insightful & constructive; mostly uses appropriate terminology. Occasionally comments are too general or not relevant to the discussion.	Comments always insightful & constructive; uses appropriate terminology. Comments balanced between general impressions, opinions & specific, thoughtful criticisms or contributions.	
	0-16 points	**17-19 points**	**20-22 points**	**23-25 points**	**/25**
Listening	Does not listen to others; regularly talks while others speak or does not pay attention while others speak; detracts from discussion; sleeps, etc.	Student is often inattentive and needs reminder of focus of class. Occasionally makes disruptive comments while others are speaking.	Student is mostly attentive when others present ideas, materials, as indicated by comments that reflect & build on others' remarks.	Student listens attentively when others present materials, perspectives, as indicated by comments that build on others' remarks, i.e., student hears what others say & contributes to the dialogue.	
				TOTAL	**/100**

Organization of the Course and Course Calendar

Note that the 'Lecture' refers to slides used and provided for each class. 'Chapter' refers to a chapter from the companion ebook.

Week	Date	Title/Topic(s)	What To Do: Activities, and Assignments w/Deadlines

1	1/18	Introduction to the course
		Setting up your computer
		Access to the server
		Introduction to development tools (SSH, SFTP, Trello, GitHub, Slack)
		UNIX
		  - Basic commands
		  - File editing
			• Lecture-1/Chapters-1, Appendix
			• Assignment-1

2	1/25	Python (1)
		  - Data types and functions
		  - Control structures and algorithms
		  - Statistics essentials
			• Lecture-2/Chapter-2
			• Assignment-2

3	2/1	Python (2)
		  - Correlation
		  - Linear regression
			• Lecture-3/Chapter-2
			• Assignment-3

4	2/8	Python (3)
		  - Machine learning essentials
		  - Classification
		  - Clustering
			• Lecture-4/Chapter-2
			• Assignment-4

5	2/15	R (1)
		  - Data frames and other data structures
		  - Descriptive statistics & Exploratory data analysis
		  - Data cleaning
			• Lecture-5/Chapter-3
			• Assignment-5

6	2/22	R (2)
		  - Basic statistical methods / packages
		  - Visualization
		  - Working with map data
			• Lecture-6/Chapter-3
			• Assignment-6

7	3/1	Midterm (open book, open Internet)	• Start in class and finish at home (see 'Key Assignments' section for details)
--	3/8	*No class – Instructor away for a conference*	

--	3/15	*No class – Spring break*	

8	3/22	Database
		   - MySQL
		   - Data processing with database using Python and R
			• Lecture-7/Chapter-4
			• Assignment-8

9	3/29	Case study-1	• Lecture-8
10	4/5	Case study-1 (continued)	• Lecture-9 • Assignment-9
11	4/12	Case study-2	• Lecture-10 • Assignment-10
12	4/19	Case study-2 (continued)	• Lecture-11 • Assignment-11
13	4/26	Case study-3	• Lecture-12 • Assignemnt-12
14	5/3	Course review and wrap-up Final project presentations	• Final project report due on 5/5 (see 'Key Assignments' section for details)

Below are some of the potential case studies that could be covered during weeks 9-13. Actual selection of the case studies will depend on the comfort and skill levels of the class.

Potential Case Study 1 [Titanic: Machine Learning from Disaster]

This is one of the good examples that provide a way of making sense of practical problems and associated data through languages and tools we have learned through the lectures. You can see more information at https://www.kaggle.com/c/titanic.

[Problem]
The sinking of the Titanic is one of the most infamous shipwrecks in history. During her maiden voyage, the Titanic sank after colliding with an iceberg, killing 1502 out of 2224 passengers and crew.

One of the reasons that the shipwreck led to such loss life was that there were not enough lifeboats for the passengers and crew. Although there was some element of luck involved in surviving the sinking, some groups of people were more likely to survive than others, such as women, children, and the upper-class.

In this practice, we will the analysis of what sorts of people were likely to survive, applying the tools of machine learning to predict which passengers survived the tragedy.

[Procedure]

1) Data: train and test data, along with gender and gender-class model
    - Data (CSV format) explore to see if patterns are noticed

- Use Excel for descriptive presentation and simple data formatting

2) Python: Data processing
                 - Reading in the train data set in Python
                            - csv reader in Python
                                       - Reading the test data
                 - Writing the gender model as a csv
                            - Format change using Python to different model for input/output
                 - Be familiar with other packages such as Numpy, Scipy, Pandas, matplotlib
                            - Referencing and filtering
                            - Plotting
                            - Cleaning the data
                            - Feature Engineering

3) Python: Random Forests
                 - Data modification for the machine learning method
                 - Predicting the survival using scikit-learn package

4) R: In case of using R (http://trevorstephens.com/post/72916401642/titanic-getting-started-with-r)
                 - Reading the train data set in R
                 - Gender-class model
                 - Decision trees
                            - A library, rpart, for 'Recursive Partitioning and Regress Trees'
                            - Graphic libraries such as rattle and RColorBrewer
                 - Feature engineering
                            - Chopping and combining different attributes to squeeze a little bit more value
from the given data (i.e., ticket number, cabin, and name)
                 - (Optional: Random forests)

5) Results
                 - Compare the results by submitting to the Kaggle platform

Potential Case Study 2 [Sentiment Analysis on Social Media]

People share their knowledge and opinions on social media, primarily in a textual format. Companies and institutions are interested in this information to understand customers' experience and the feedback on the products or services they are providing. Sentiment analysis can be used to extract and identify sentiment that is conveyed through the content. This practice introduces sentiment analysis using social media data.[1]

[Procedure]

1) Data: collect social media data using API
                 - Twitter: write a Python code to retrieve tweets
                 - (Optional: Reddit)

2) Vocabularies for sentiment analysis
                 - AFINN-111
                 - WordNet
                 - SentiWordNet (http://nmis.isti.cnr.it/sebastiani/Publications/LREC10.pdf)

---

[1] Refer https://github.com/linkTDP/BigDataAnalysis_TweetSentiment

3) Deriving sentiment
       - Using AFINN-111
       - Using SentiWordNet
(http://www.academia.edu/1336655/Reviews_Classification_Using_SentiWordNet_Lexicon)
       - Understand the sentiment classification phases
           - Tokenization
           - Speech tagging
           - WordNet WSD (Word Sense Disambiguation)
           - SentiWordNet interpretation
           - Sentiment orientation

4) Coding in Python
       - Libraries: NLTK, Requests, Math, Urllib2, google-api-python-client
       - DeriveTweetSentimentEasy.py
       - NewTermSentimentInference.py
       - DocumentSentimentClassification.py

5) (Optional) Practice with Reddit data

Potential Case Study 3 [Data Science for Social Good]

There are many attempts to solve problems related with social good using data-driven approaches. In this practice, we will review a problem of predicting the usage of bike share station at Chicago. This is one of the projects that were advised by the Eric & Wendy Schmidt Data Science for Social Good Fellowship at University of Chicago. You can see more projects at http://dssg.io/projects/.

[Problem]

Popular in Europe and Asia, bike share is spreading in the States and the City of Chicago just launched Divvy, a new bike share system designed to connect people to transit, and to make short one-way trips easy.

However, bike share systems have a central flaw. Because of commuting patterns, bikes tend to pile up downtown in morning and on the outskirts in the afternoon. This imbalance can make using bike share difficult, because people can't take out bikes from empty stations, or finish their rides at full stations.

Our problem here is: to predict how many bikes are likely to be at each Divvy station in the future; and to assign the bike share trucks for rebalancing.

[Procedure]

1) Approach: Poisson regression
       - Use Poisson regression to predict the number of bikes at bike share stations in other cities that have longitudinal data

2) Data: Bike share station availability and weather
       - Alta bikeshare (http://developer.motivateco.com/): Real-time data via API.
       - Weather data: www.forecast.io
       - Database set-up

3) Exploratory Analysis
- Plot usage patterns by time of day, days, and temperature.
- Either of Python and R can be used for the exploration.

4) Methodology: Statistical Models
- Predictor variables of the models
- the current number of bikes at a station
- the available slots at a station
- the hour of the day
- the current temperature
- the current prediction
- Poisson point process: Python package *statsmodels*
- Binomial logistic regression: Python package *statsmodels*

5) Validating
- Simulating the number of bikes
- Using predictions to stock stations
- Mean squared error validation
- Comparing predictions to actual bikes

6) Optional: Web Application
- Webapp for visualization

Late Submission Policy

Unless otherwise noted, all written assignments, group projects, etc., are due at the time and date listed in the syllabus or on Sakai. If you experience an unavoidable personal situation that prevents you from completing work on time, please inform the instructor prior to the date the work is due. Late work will result in points taken off, a lowering of the assignment grade, and/or an "F," depending on the assignment.

Attendance and Participation Policy

It is University policy (University Regulation on Attendance, Book 2, 2.47B, formerly 60.14f) to excuse without penalty students who are absent from class because of religious observance, and to allow the make-up of work missed because of such absence. Examinations and special required out-of-class activities shall ordinarily not be scheduled on those days when religiously observant students refrain from participating in secular activities. Absences for reasons of religious obligation shall not be counted for purposes of reporting. Students are advised to provide timely notification to instructors about necessary absences for religious observances and are responsible for making up the work or exams according to an agreed-upon schedule.

Students are expected to attend all classes. If you expect to miss one or two classes, please use the University absence reporting website https://sims.rutgers.edu/ssra/ to indicate the date and reason for your absence. An email is automatically sent to the instructor. Note that if you must miss classes for longer than one week, you should contact a dean of students to help verify your circumstances. Also note that class participation accounts for 5% of the final grade (see the

grading policy above). You are responsible for obtaining any material that might have been distributed in class the day when you were absent.

Communication

For emails, Rutgers accounts preferred. Always include your name (esp. if emailing from non-Rutgers account) and always include the course number (MI 562) in subject line. If you don't, your email most likely will not be read. This course uses Sakai, primarily for submitting assignments and posting grades. Speaking of communication, please turn off or silent your cellphones and anything that can spontaneously make noise before entering the class.

Library Resources

Rutgers University Libraries offer numerous resources to assist students. Librarians can help guide you through research and reference tools. A series of LibGuides are available to get you started. Here are some of the LibGuides you may find useful:

Introduction to Rutgers University Libraries
(http://libguides.rutgers.edu/intro)
Congressional Research
(http://libguides.rutgers.edu/congress)
Communication Studies
(http://libguides.rutgers.edu/cat.php?cid=25866)
Government Information
(http://libguides.rutgers.edu/cat.php?cid=25881)
Journalism and Media Studies (http://libguides.rutgers.edu/cat.php?cid=34201)
Law (http://libguides.rutgers.edu/cat.php?cid=25854)
Library and Information Science
(http://libguides.rutgers.edu/cat.php?cid=25870)
Political Science (http://libguides.rutgers.edu/cat.php?cid=25871)

Academic Integrity

The consequences of scholastic dishonesty are very serious. Rutgers' academic integrity policy is at http://academicintegrity.rutgers.edu/. Multimedia presentations about academic integrity may be found at http://www.scc.rutgers.edu/douglass/sal/plagiarism/intro.html and http://wps.prenhall.com/hss_understand_plagiarism_1/0,6622,427064-,00.html

Academic integrity means, among other things:
- o Develop and write all of your own assignments.
- o Show in detail where the materials you use in your papers come from. Create citations whether you are paraphrasing authors or quoting them directly. Be sure always to show source and page number within the assignment and include a bibliography in the back.
- o Do not look over at the exams of others or use electronic equipment such as cell phones or MP3 players during exams.

o Do not fabricate information or citations in your work.
o Do not facilitate academic dishonesty for another student by allowing your own work to be submitted by others.

If you are doubtful about any issue related to plagiarism or scholastic dishonesty, please discuss it with the instructor.

Students with Disabilities

Students with documented disabilities who wish accommodations in this class must do so through the Rutgers Disabilities Services Office. See http://disabilityservices.rutgers.edu/ for details. SC&I Assistant Dean Kevin Ewell (kevin.ewell@rutgers.edu) will coordinate your services locally. Student who develop disabling medical problems or other issues during the semester that affect your ability to complete coursework should request advising from Lilia Pavlovsky (pavlovsk@rutgers.edu) or SC&I Assistant Dean Kevin Ewell (kevin.ewell@rutgers.edu).

How to Succeed in this Course

- Successful students will attend class regularly. If you know you must miss a class, please contact the instructor in advance, either by phone or email. You can obtain assignments or notes from a fellow classmate or from the instructor. In the case of a prolonged absence from class, you should schedule an appointment with the instructor so we can discuss the course material and concepts that you missed.
- Successful students will pay close attention to the course goals and objectives, because they will help you master the course material. If you have any questions about any of the objectives, please ask the instructor. Questions are encouraged during class for clarification. Remember that you're probably not the only one in the class with the same question. If you have questions about material from previous classes, please email me prior to the next class session, and the instructor will address your question at the beginning of the class session, prior to any exams.
- Successful students will talk to their classmates about the course material. You will find that they can help you understand many complex issues.
- Successful students will come prepared to the class with assigned readings for that class. This will help you comprehend the material for that class better. Regular assignments will also be given at the end of each class. Doing these assignments and turning them on time (typically before the next class), will help you obtain higher-order learning goals for this course.

Professionalism

- Access the class material promptly and on time.
- Respect yourself, classmates, and the instructor.
- Participate in class discussions.
- Display preparedness for class through completing reading assignments.
- Present content knowledgeably with supported reasoning.

Biographical Information about the Instructor

Chirag Shah is an Associate Professor in both the School of Communication & Information (SC&I) and the Department of Computer Science at Rutgers University. His research interests include information seeking/retrieval in social and collaborative contexts. Dr. Shah received a PhD in information science from the University of North Carolina (UNC) at Chapel Hill. He directs the InfoSeeking Lab at Rutgers where he investigates issues related to information seeking, interactive information retrieval, and social media, supported by grants from National Science Foundation (NSF), Institute of Museum and Library Services (IMLS), Google, and Yahoo! He also serves as a consultant to the United Nations Data Analytics on various Data Science projects involving social and political issues, peacekeeping, climate change, and energy.

Weather and Other Emergencies

The university rarely cancels classes for inclement weather. To check if classes are cancelled, visit http://campusstatus.rutgers.edu/. You can also try to call 732-932-7799. During severe weather conditions, announcements are made over the following radio stations: WCTC (1450AM), WMGQ (98.3FM), WRSU (88.7FM), WMCA (570AM), WOR (710AM), WCBS (880AM), WABC (770AM), WBGO (83.3FM), WHWH (1350AM), WPST (97.5FM), WJLK (131OFM), WMTR (1250AM).

Other Information To Keep in Mind

Students are expected to take the initiative to become aware of university policies and services that will help them succeed in their academic work. You are responsible for following the guidelines specified in the university's academic integrity policy, procuring information literacy skills needed to succeed in academics, seeking advisement when needed, and taking advantage of support services.

Students seeking help with the content of this course should contact the instructor either during office hours, or make a separate appointment. Students seeking help with the scheduling of classes or registration should contact the SC&I Student Services Office in Room 214 of the SC&I Building. Check here for contact information: http://comminfo.rutgers.edu/student-services/contact-us.html.

A great deal of information is available on the SC&I website, including course descriptions and details about all degree programs: http://comminfo.rutgers.edu.

Rutgers has Learning Centers on each campus where any student can obtain tutoring and other help; for information, check http://lrc.rutgers.edu/   Rutgers also has a Writing Program where students can obtain help with writing skills and assignments: http://plangere.rutgers.edu/index.html

SC&I IT Services offers help with a variety of technology problems. They are located in the SC&I Building in Room 120 (first floor); 848-932-5555; help@comminfo.rutgers.edu .