Spreadsheet Technology And Applications

INSTRUCTOR:	Kangmin Cho Adjunct Professor, Department of Applied Mathematics and Statistics, SUNY Korea.
CLASS:	Lecture Room C107, Tuesday & Thursday 2:00 – 3:20 pm
OFFICE:	Academic Building B508
PHONE:	TBA
EMAIL:	kangmin.cho@sunykorea.ac.kr
OFFICE HOUR:	Tuesday & Thursday 12:30 – 2:00 pm, or by appointment.
COURSE WEBSITE:	Brightspace

Course Description: Spreadsheets are a critically important tool in many careers, particularly in quantitative fields. This 3-credit course is designed for students pursuing their career in business, science or engineering. By learning how to use various functions and commands of the spreadsheets as well as how to model real-world situations, students will learn to plan, create, and program spreadsheets for common business and/or engineering applications such as project management, optimization, budgeting, finance, and more.

Textbook: All textbooks are recommended, but not required. Your learning will be based on the lecture slides, so please review the slides first and use the below texts as supplements.

[1] "Essential Tools for Process Improvements" by Fred J. Rispoli, Whiz Bang LLC, 2016. ISBN: 978-1-951150-79-2

[2] "Microsoft Excel 365 Bible" by Michael Alexander and Dick Kusleika, John Wiley & Sons, Inc, 2022. ISBN: 978-1-119-83510-3

[3] "Microsoft Excel Data Analysis and Business Modeling (Office 2021 and Microsoft 365)" by Wayne L. Winston, 7th edition, Pearson Education, 2022. ISBN: 978-0-13-761366-3

Prerequisite and Technical Requirements:

There is no special requirement for this course. However, students should have access to a laptop with a spreadsheet program. The latest version of Microsoft Excel (Excel 2016 or higher) is strongly recommended. Student will be responsible for having a reliable laptop and Internet connection throughout the term.

The following list details are recommended computer set-up and software packages you are required to use for the successful course progress:

- Laptop (or PC) with Windows 8 or higher;
- Macintosh with OS 10.12 or higher;

- Intel Core i3 or higher;
- 8 GB RAM;
- 250 GB Hard Drive;
- Accessible and stable Internet connection;
- Spreadsheet software (Microsoft Excel 2016 or higher).

Technical Assistance:

Stony Brook students with an active NetID can download and install Microsoft Office 365 (which includes Excel) at the SBU IT website. Please visit and follow the instruction: https://it.stonybrook.edu/help/kb/where-can-i-download-the-microsoft-office-software-suite

For other Incheon Global Campus college students (SUNY FIT, The University of Utah, George Mason University, Ghent University), IGC IT Center provide access to Microsoft Office software for educational purposes. Please contact them at (82) 32-626-0200 or visit their website at https://itcenter.igc.or.kr/xefc/egene/login.jsp

On campus, students can access to free wired LAN and Wi-Fi services. Please visit IGC IT Center as well to know how to apply for the services.

If you need technical assistance at any time during the course or to report a problem with Brightspace, you can contact SBU Academic Technology Services at https://it.stonybrook.edu/services/itsm

Course Delivery Mode and Structure:

Every lecture will be delivered in class, on campus. No recordings of lectures will be provided. Therefore, students are expected to attend every session during the term.

Although students can use laptops to run spreadsheet program during the class, it is expected to concentrate on the lecture slides when laptops are not necessary.

Regular announcements will be sent from Brightspace. These will be posted in the class and may (or may not) be sent by email. Brightspace will also be used for the facilitation of communications between faculty and students, submission of assignments, and posting of grades. Please log-in with your Stony Brook NetID to access the course website running on Brightspace. Students should regularly check and be mindful of all course expectations, deliverables, and due dates.

Topics to be Covered: Spreadsheet functions and operations; basic statistical measures; financial decision and portfolio; logical formulas; mathematical operations; matching and lookups; conditional analysis; graphics and visualizations; PivotTables; optimization through what-if analysis; goal seeking and solver.

Grading Evaluation:

Attendance	5%
Homework Assignments	25%
Midterm Exam	30%
Final Project	40%
Total	100%

[1] Attendance [5%]

Student attendance will be recorded on an open 'Spreadsheet' file. Three late attendances will be equally regarded as an absence. Please inform me before the session begins (preferably at least a day before the class) if you struggle with any difficulties to attend the class. If you fail to inform me your excuse(s) for the absence, it may not be covered. Please also refer to the school policy on student attendance. If student misses any session, note that the student is responsible for any missed lecture materials.

[2] Homework Assignments [25%]

Students will complete assignments in Excel and submit completed workbooks through Brightspace. Homework will be assigned approximately every week and there will be at least a week to work on the assignment. No late homework assignments will be accepted nor reviewed. Any assignments submitted via other mediums than Brightspace (i.e., email, paper copy, etc.) will not get credit either. Please observe deadlines. You may discuss the homework problems with classmates or the instructor, but your work should be original.

[4] Midterm Exam [30%]

There will be one midterm exam in class. The tentative date for the midterm exam is October 17, 2023. This exam is to judge whether students are aware of key concepts, functions, and ideas learned from the course. There will be a review session before students take the exam. For a fair evaluation, there will be no make-up exam under any circumstances.

[5] Final Project [40%]

There will be a final group project. The groups will be assigned after the midterm exam. This project is a great opportunity to demonstrate what you have learned throughout the semester and explain how you utilized appropriate functions and tools to tackle real-world problems. Tentatively, students will present their project output on the Final Exam Day.

Your final letter grade will be decided by the weighted average of the above scheme. Other variables (i.e., trend in progress, etc.) may also be considered. A common scale of the final letter grade is as follows.

A	93-100	(superior work)
A-	90-92	
B+	87-89	
B	83-86	(good work)
B-	80-82	
C+	77-79	

C	73-76	(satisfactory work)
C-	70-72	
D+	67-69	
D	61-66	(minimum passing grade)
F	<60	(failing work)

Learning Objectives:

Upon completion of this course, students will be able to:

1) Acquire a basic understanding of how spreadsheets work;
2) Be acquainted with technology that utilizes quantitative skills;
3) Engage in modeling problems using mathematics in a spreadsheet context;
4) Apply spreadsheet tools for informed decision making;
5) Understand the concept of algorithm as a mechanism for processing data and information.

The Stony Brook Curriculum (SBC) Satisfaction:

SBC includes both breadth and depth of study, and ensures that students will learn skills necessary for life-long learning. This course fulfills two SBC categories, QPS (Master Quantitative Problem Solving) and TECH (Understand Technology).

In this course, students will achieve the following QPS Objectives:

1) Create and interpret mathematical models designed with formulas, graphs, tables, or schematics. Draw analysis on data from such models built with spreadsheet programs.
2) Display mathematical information with symbols, visuals, and numbers. Make meaningful representations of data in the form of charts and pivot tables. Present them verbally with spreadsheet in these contexts.
3) Apply quantitative methods from algebra, geometry, calculus, or applied statistics to tackle problems. Spreadsheet models will require students to use knowledge from algebra and statistics.
4) Evaluate and scrutinize if the models and their results are reasonable. Use interpretation to make decisions.
5) Understand the limitations of mathematical and statistical models.

To satisfy the QPS category, students must pass a QPS certified course with a letter grade of C or higher.

In this course, students will achieve the following TECH Objectives:

1) Demonstrate the ability to utilize spreadsheet technology and tools to practical problem solving.

2) Observe, understand, design, and investigate aspects of the technology world through spreadsheet modeling.

School Policy on Attendance

(1) All students of SUNY Korea are required to attend every class.

(2) Unexcused absences will affect seriously the student's final grade in the course.

(3) If a student has over 20% unexcused absence, the student's final course grade will be an 'F'. That is, if the class is a 75-minute class, and is held twice a week, the 7th unexcused absence of a student will lead to an F grade of the course.

(4) Students should report the reason of absence to the instructor in advance, or immediately after the absence.

(5) When a student excuses his/her absence, the student must provide documentation of the reason for the absence to the instructor.

(6) The instructor of the course reserves the right to excuse absences.

(7) The course instructor may excuse the absence if the submitted documentation fulfills the conditions below.

i) Extreme emergencies (e.g. death in the family)

ii) Severe medical reasons with doctor's note (Not a slight illness)

iii) Very important events (e.g. national conference, official school event)

(8) At the end of semester, the course instructor should submit a copy of the attendance sheet to the Academic Affairs Office.

Academic Integrity Statement

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/.

Accommodations for Disabilities

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact One-Stop Service Center, Academic Building A201, (82) 32-626-1117. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation are confidential. In addition, this statement on

emergency evacuation is often included, but not required: Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and One-Stop Service Center.

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

Responding to Disruptions in the Classroom

Stony Brook University expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to observe national, state, and local laws and University policies; and to respect the rights, privileges, and property of other people.

While the University is a place where the free exchange of ideas and concepts allows for debate and disagreement, all classroom behavior and discourse should reflect the values of respect and civility. Both students and the course instructors share the responsibility to maintain an appropriate learning environment that reflects these values. Students have both the right to learn and the responsibility to participate in and respect the learning process.

Course Evaluations

Stony Brook University values student feedback in maintaining the high-quality education it provides and is committed to the course evaluation process, which includes a mid-semester assessment as well as an end-of-the-semester assessment, giving students a chance to provide information and feedback to an instructor which allows for development and improvement of courses. Please click the following link to access the course evaluation system: http://stonybrook.campuslabs.com/courseeval/

Tentative Course Schedule:

Week	Date	Topics to cover
1	8/29	Introduction to Spreadsheet
	8/31	Introduction to Spreadsheet (continued)
2	9/5	Basics to Functions and Formulas
	9/7	Working with Functions and Formulas
3	9/12	Working with Functions and Formulas (continued)
	9/14	Working with Functions and Formulas (continued)
4	9/19	Working with Functions and Formulas (continued)
	9/21	Troubleshooting Formula Errors
5	9/26	Statistical Measures and Database
	9/28	NO CLASS – Chuseok holiday
6	10/3	NO CLASS – Korea National Foundation Day
	10/5	Charts and Visualizations
7	10/10	Charts and Visualizations (continued)
	10/12	Review
8	10/17	Midterm Exam
	10/19	Growth Rates
9	10/24	Compounding Values
	10/26	Investment Decision Criteria
10	10/31	Investment Decision Criteria (continued)
	11/2	Loan Amortization
11	11/7	Loan Amortization (continued)
	11/9	Data Validation
12	11/14	Data Validation (continued)
	11/16	Analyzing Data with PivotTables
13	11/21	Analyzing Data with PivotTables (continued)
	11/23	Spreadsheet What-If Analysis
14	11/28	Spreadsheet What-If Analysis (continued)
	11/30	Goal Seeking and Excel Solver
15	12/5	Goal Seeking and Excel Solver (continued)
	12/7	Review
16	FINAL	Final Presentation (December 14, 12:30 – 3:00 pm)