# University of North Texas at Dallas
# Fall 2016 SYLLABUS

| **MATH 1680** (002)  **Elementary Probability and Statistics** (3CR) | | | |
|---|---|---|---|
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| **Department of** | Mathematics and Information Sciences | **School of** | Liberal Arts and Sciences |
| | | | |
| **Instructor Nam**e | Byungik "Ike" Kahng | | |
| **Office Location** | 2-224 | | |
| **Office Phone** | 972-338-1570 | | |
| **Email Address** | byungik.kahng@untdallas.edu | | |
| | | | |
| **Class Time & Room** | MW 11:30am – 12:50am, at 2-337 | | |
| **Office Hours** | Mon - Thu 08:30 – 10:00, or by appointment | | |
| | | | |
| **Catalog Description** | An introductory statistics course to serve students of any field who want to apply statistical inference.  Descriptive statistics, elementary probability, estimation, hypothesis testing and small samples. | | |
| **Prerequisites** | Math 1010 with grade C or better, or the placement test result appropriate for this course. | | |
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| **Required Text and Software** | • WebAssign (http://webassign.net) Class Key: unt 8880-5342 (includes an e-book) <br> • Wolfram Mathematica or CDF Player (https://www.wolfram.com/cdf-player/) | | |
| **Recommended Text and References** | • Elementary Statistics by R. Johnson and P. Kuby, 11th edition, Cengage Learning. <br> • Beginning and Intermediate Algebra by Karr, Massey and Gustafson, 7th edition. | | |
| **On-line Tutoring (Smart Thinking)** | • http://services.smartthinking.com <br> • Initial ID & PW  untdstudent  &  seagull | | |

| **Core Objectives:** | |
|---|---|
| | This course addresses the core objectives of **critical thinking skills, communication skills**, and **empirical and quantitative skills** <br><br> **1.  Critical Thinking Skills** – to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information <br><br> **2.  Communication Skills** – to include effective development, interpretation and expression of ideas through written, oral and visual communication <br><br> **3.  Empirical and Quantitative Skills** – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions |

| **Student Learning Outcomes:** | Upon a successful completion of this course the students will |
|---|---|
| 1 | Explain the use of data collection and statistics as tools to reach reasonable conclusions. |
| 2 | Recognize, examine and interpret the basic principles of describing and presenting data. |
| 3 | Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics. |
| 4 | Explain the role of probability in statistics. |
| 5 | Examine, analyze and compare various sampling distributions for both discrete and continuous random variables. |
| 6 | Describe and compute confidence intervals. |
| 7 | Perform hypothesis testing using statistical methods. |
| 8 | Solve linear regression and correlation problems. |

## Course Outline

This schedule is subject to change by the instructor. Any changes to this schedule will be communicated through the class website and the official UNT e-mail.  Besides the scheduled assignments, additional readings and activities may be added.  Such changes will be communicated through the class page.

|          | Monday                                      | Wednesday                                       |
|----------|---------------------------------------------|-------------------------------------------------|
| Week 1   | Introduction  //  1. Statistics             | 2. Descriptive Statistics of Single-Variable Data |
| Week 2   | 2. Descriptive Statistics of Single Variable | 3. Descriptive Statistics of Bivariate Data     |
| Week 3   | **Labor Day** (Sep. 5)                      | 3. Descriptive Statistics of Bivariate Data     |
| Week 4   | 4. Probability                              | 4. Probability                                  |
| Week 5   | 4. Probability                              | 5. Probability Distribution                     |
| Week 6   | 5. Probability Distribution                 | 6. Normal Distribution                          |
| Week 7   | 6. Normal Distribution                      | Review                                          |
| Week 8   | **Exam 1** (Oct. 10)                        | 7. Sample Variability                           |
| Week 9   | 7. Sample Variability                       | 8. Introduction to Statistical Inference        |
| Week 10  | 8. Introduction to Statistical Inference    | 8. Introduction to Statistical Inference        |
| Week 11  | 9. Inferences Involving One Population      | 9. Inferences Involving One Population          |
| Week 12  | 9. Inferences Involving One Population      | 10. Inferences Involving Two Populations        |
| Week 13  | 10. Inferences Involving Two Populations    | 10. Inferences Involving Two Populations        |
| Week 14  | 11. Applications of Chi-Square*             | 12. Analysis of Variance*                       |
| Week 15  | 13. Linear Correlation and Regression Analysis* | 14. Elements of Nonparametric Statistics*   |
| Week 16  | **Exam 2** (Dec. 5)                         |                                                 |

## Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

- **Exams**: *written tests designed to measure the knowledge and the understanding on the course materials.*
- **On-line Assignments (WebAssign)**: *computer-based assignments designed to supplement and reinforce the course materials.*
- **Hand-written Assignments (Black Board)**: *small-scale written assignments designed to supplement, reinforce and assess the course materials and the ability to write mathematical phrases, sentences and paragraphs.*
- **Projects**: *hand-written assignments in larger scale that combine more in-depth applications.*
- **Class Participation**: Individual and/or group exercises that take place in class or in on-line learning session.

**Grading Policy**:

| Activities/Assignments  | Value (percentages) |
|-------------------------|---------------------|
| Exam 1                  | 30%                 |
| Exam 2                  | 40%                 |
| Hand-written Assignment | 10%                 |
| On-line Assignment      | 10%                 |
| Projects                | 10%                 |
| **Total:**              | **100%**            |

**Grade Determination**

- A:      $90\% \leq$ (Total Score)
- B:      $80\% \leq$ (Total Score) $< 90\%$
- C:      $70\% \leq$ (Total Score) $< 80\%$
- D:      $60\% \leq$ (Total Score) $< 70\%$
- F:      (Total Score) $< 60\%$.

# Instructor Specific Policies and Procedures

**Exam Policy:**
*Exams must be taken in person as scheduled, except for documented emergencies approved by the instructor in individual bases.  A one-page formula sheet is allowed but not the whole class note.  TI-84 level calculators are allowed, but calculators with computer algebra system (such as TI-89, TI-92 or Voyage 2000) are not allowed during the exam.  Other than pre-approved calculators, no other computing aid (such as those supported by tablets and smart phones) is allowed.  Cell phones are allowed but they are for emergency calls only.*

**Assignment Policy:**
*The written assignments and the final project must be submitted electronically through the course website.  Use a single-file pdf format to ensure the safe submission.  Late submission will be accepted with the late penalty of 20% per day.  In any case, the final submission must be done before the final exam.*

**Technology Requirement:**
*Besides the university's technology requirement, all students must get Wolfram Mathematica or CDF Player.  It is available for free at https://www.wolfram.com/cdf-player/.  Detailed instruction will be communicated through the class page.  Every assignment must be submitted in a single-file pdf format.  This can be done by some free websites such as https://online2pdf.com/.  Detailed instruction will be communicated through the class page.*

# University Policies and Procedures

**Online "Netiquette":**
*Emails should use proper "netiquette," i.e., no writing in all caps (usually denotes yelling), no curse words, and no "flaming" messages (angry, personal attacks). Racial, ethnic, or gender slurs will not be tolerated, nor will pornography of any kind. Any violation of netiquette policies may result in a loss of points or removal from the course. Repeated online misconduct may be subject to more serious sanctions, such as warnings and other sanctions in accordance with the University's policies and procedures.  Refer to the Student Code of Student Rights Responsibilities and Conduct at http://www.untdallas.edu/osa/policies. Respect is a given principle in all online communication. Therefore, please be sure to proofread all of your written communication prior to submission.*

**Students with Disabilities (ADA Compliance):**
*The University of North Texas Dallas faculty is committed to complying with the Americans with Disabilities Act (i.e., ADA).  Students' with documented disabilities are responsible for informing faculty of their needs for reasonable accommodations and providing written authorized documentation.  Grades assigned before an accommodation is provided will not be changed as accommodations are not retroactive.  For more information, you may visit the Student Life Office, Suite 200, Building 2 or call 972-780-3632.*

**Blackboard Learn Accessibility Statement:** University of North Texas at Dallas is committed to ensuring its online and hybrid courses are usable by all students and faculty including those with disabilities.  If you encounter any difficulties with technologies, please contact our ITSS Department.  To better assist them, you would want to have the operating system, web browser and information on any assistive technology being used.

Blackboard Learn course management system's accessibility statement is also provided:
http://www.blackboard.com/Platforms/Learn/Resources/Accessibility.aspx

**Instructional technology tools, such as Turnitin, Respondus, Panopto, and publisher cartridge content (i.e. MyLab, Pearson, etc.) may NOT be fully ADA compliant.  Please contact our Disability Office should you require additional assistance utilizing any of these tools.**

**Student Evaluation of Teaching Effectiveness Policy:**
*The Student Evaluation of Teaching Effectiveness (i.e., SETE) is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught.   I am very interested in the feedback I get from students, as I work to continually improve my teaching.  I consider the SETE to be an important part of your participation in this class.*

**Academic Integrity:**
*Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of conduct and Academic Dishonesty policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University's policies and procedures. Refer to the Student Code of Student Rights Responsibilities and Conduct at http://www.untdallas.edu/osa/policies for complete provisions of this code.*

**TurnItIn Statement:**
*Students may be required to submit written assignments for this class to Turnitin, a web-based plagiarism detection service. Before submitting your paper to Turnitin, please remove your title page and other personal information. (OPTIONAL: Any paper that is not submitted to Turnitin prior to submission to the instructor will not be accepted by the instructor and will not be graded).*

**Attendance and Participation Policy:**
*The University attendance policy is in effect for this course. Class attendance in the Blackboard classroom and participation is expected because the class is designed as a shared learning experience, and because essential information not in the textbook will be discussed in the discussion board. Online presence and participation in all class discussions is essential to the integration of course material and your ability to demonstrate proficiency. Students are responsible for notifying the instructor if they will be missing online class requirements, and they must share their reason for missing class.*

**Online Attendance**: *Attendance for this online or hybrid course is considered when you are logged in and active in Blackboard, i.e., posting assignments, taking quizzes, or completing Discussion Boards. If you are absent/not active in the course shell, it is **YOUR** responsibility to let the instructor know immediately, upon your return, the reason for your absence **if** it is to be excused. Note that all instructors will follow the university policy of **14 consecutive days of unexcused absences/inactivity (i.e., failure to post assignments, take quizzes, or complete Discussion Boards) in a distance learning course resulting in failure of the course.***

**Diversity/Tolerance Policy:**
*Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive & inappropriate language (swearing) and remarks offensive to others of particular nationalities, ethnic groups, sexual preferences, religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student Conduct will be referred to the Office of Student Life as the instructor deems appropriate.*

**Technology Requirements:**
*Blackboard Learn 9.1 is the platform software for this course.*

- *Internet Explorer® 10 from Microsoft (26 October 2012 for Windows 8, 26 February 2013 for Windows 7)*
- *Internet Explorer 9 from Microsoft (14 March 2011). There are some configuration options for Internet Explorer that may make some features of Blackboard Learn difficult to use.*
- *Safari® 6 from Apple (25 July 2012)*
- *Safari 5 from Apple (7 June 2010)*
- *Safari 5 for Windows is an exception. Apple's continued support for this browser is unclear, and Blackboard does not test it.*
- *Firefox® 21 (stable channel) from Mozilla (14 May 2013)*
- *Firefox 17 (ESR channel) from Mozilla (14 May 2013)*
- *Chrome™ 27 (stable channel) from Google (21 May 2013)*

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## AY 2016-2017 FA Weekly Schedule

| Time | Mon. | Tue. | Wed. | Thu. |
|---|---|---|---|---|
| 08:30 ~ 08:45 | | | | |
| 08:45 ~ 09:00 | | | | |
| 09:00 ~ 09:15 | Office Hour | Office Hour | Office Hour | Office Hour |
| 09:15 ~ 09:30 | | | | |
| 09:30 ~ 09:45 | 2-224 | 2-224 | 2-224 | 2-224 |
| 09:45 ~ 10:00 | | | | |
| 10:00 ~ 10:15 | | | | |
| 10:15 ~ 10:30 | Math 1680-030 | Math 1100-003 | Math 1680-030 | Math 1100-003 |
| 10:30 ~ 10:45 | Elementary | College Algebra | Elementary | College Algebra |
| 10:45 ~ 11:00 | Prob & Stat | | Prob & Stat | |
| 11:00 ~ 11:15 | 2-337 | 1-244 | 2-337 | 1-244 |
| 11:15 ~ 11:30 | | | | |
| 11:30 ~ 11:45 | | | | |
| 11:45 ~ 12:00 | Math 1680-002 | Math 3400-001 | Math 1680-002 | Math 3400-001 |
| 12:00 ~ 12:15 | Elementary | Number Theory | Elementary | Number Theory |
| 12:15 ~ 12:30 | Prob & Stat | | Prob & Stat | |
| 12:30 ~ 12:45 | 2-337 | 2-336 | 2-337 | 2-336 |
| 12:45 ~ 1:00P | | | | |
| 1:00P ~ 1:15P | | | | |
| 1:15P ~ 1:30P | Available | Available | Available | Available |
| 1:30P ~ 1:45P | upon | upon | upon | upon |
| 1:45P ~ 2:00P | Appointment | Appointment | Appointment | Appointment |
| 2:00P ~ 2:15P | 2-224 | 2-224 | 2-224 | 2-224 |
| 2:15P ~ 2:30P | | | | |
| 2:30P ~ 2:45P | | | | |
| 2:45P ~ 3:00P | | | | Available |
| 3:00P ~ 3:15P | | | | upon |
| 3:15P ~ 3:30P | | | | Appointment |
| 3:30P ~ 3:45P | | | | 2-224 |
| 3:45P ~ 4:00P | | | | |
| 4:00P ~ 4:15P | | | | |
| 4:15P ~ 4:30P | | | | Available |
| 4:30P ~ 4:45P | | | | upon |
| 4:45P ~ 5:00P | | | | Appointment |
| 5:00P ~ 5:15P | | | | 2-224 |
| 5:15P ~ 5:30P | | | | |