Texas A&M University   **Marketable Skills**

Program:	Statistics
Degree:	BS
Department:	Statistics
Contact Name:	Derya Akleman
Contact Phone:	979 845 3141

Outcome	Master the depth of knowledge required for the degree[1][3]
Marketable Skills	- Ability to understand the statistical process as a whole - Ability to apply statistical reasoning to domain-specific questions - Ability to translate research questions into statistical questions - Ability to relate the data to the context - Ability to understand (and believe) the relevance of statistics.

Outcome	Demonstrate critical thinking [2]
Marketable Skills	- Analytical thinking -Statistical thinking in a data-rich environment, Computational thinking and Integration of approaches - Mathematical Foundations including the probability, distributions and distribution theory - Model Building and Assessment – Informal or formal

Outcome	Work effectively with data[1]
Marketable Skills	- Ability to manage and marshal data, including joining data from different sources and formats and restructuring data into a form suitable for analysis facileness with professional statistical software and other appropriate tools for data exploration, cleaning, validation, analysis, and communication - Ability to analyze and interpret complex data.

Outcome	Knowledge Transference [2][3]
Marketable Skills	- Experience using oral, written, and visual modes to communicate effectively to a variety of audiences [2] - Trained in ethics and reproducibility [2][3] - Become critical consumers of statistically-based results reported in popular media, recognizing whether reported results reasonably follow from the study and analysis conducted [3] - Able to produce graphical displays and numerical summaries and interpret what these do and do not reveal [3] - Recognize and be able to explain the variability and central role of randomness in designing studies and drawing conclusions[3]

Outcome	Practice personal and social responsibility[1]
Marketable Skills	- An understanding of professional and ethical responsibility - Ability to consider the relative costs and benefits of potential actions to choose the most appropriate one

Outcome	Prepare to engage in lifelong learning
Marketable Skills	• Understanding the implications of new information for both current and future problem-solving and decision-making* • Recognition of the need for and an ability to engage in life-long learning[i]

Outcome	Work collaboratively
Marketable Skills	• Ability to use the techniques, skills, and modern scientific and technical tools necessary for professional practice[k] • Ability to function on multidisciplinary teams[d] • The broad education necessary to understand the impact of solutions in a global and societal context[h]

Notes:

- Marketable skills listed with an asterisk (*) for this example program were drawn from the Knowledge, Skills, and Abilities identified by the US Department of Labor and Statistics for "Statisticians" as published on O*Net Online (https://www.onetonline.org/link/summary/15-2041.00)
- Marketable skills listed with a letters (a)-(k) for this example program were drawn from ABET Criterion 3 (http://www.abet.org/accreditation/accreditation-criteria/criteria-foraccrediting-applied-and-natural-science-programs-2018-2019/#GC3).
- Alternate sources for degree-specific marketable skills include learning outcomes and associated metrics used for programmatic assessment:

  [1] American Statistical Association Undergraduate Guidelines Workgroup Curriculum Guidelines for Undergraduate Programs in Statistical Science (https://www.amstat.org/asa/files/pdfs/EDU-guidelines2014-11-15.pdf)

  [2] Curriculum Guideliness for undergraduate Programs in Data Science, March 2017 (https://www.annualreviews.org/doi/full/10.1146/annurev-statistics-060116-053930)

  [3] Final_GAISE2016_Report_August8.docx (http://www.amstat.org/asa/files/pdfs/GAISE/GaiseCollege_Full.pdf)

- Learning outcomes or skills required for programmatic accreditation.