

**MBA 579: Green Belt 01: Define and
Measure**

SCHOOL OF BUSINESS AND MANAGEMENT

3 Credits

Effective Date (Winter/2022)

List any Pre-requisite or Co-Requisite: None

Access to the Internet is required.

All written assignments must be in Microsoft-Word-compatible formats.

See the library's APA Style Guide tutorial for a list of resources that can help you use APA style.

Faculty Information

[INSTRUCTOR MAY INSERT PERSONAL MESSAGE IF DESIRED]

Contact Information

Faculty Name: FACULTY NAME

Contact Information: CONTACT INFORMATION

Course Description

This course covers the first part of a two-phase learning plan for Six Sigma Green Belt. In this preliminary section, learners will be introduced to Define and Measure phases of the Define, Measure, Analyze, Improve, and Control (DMAIC) process. The cohesive body of knowledge that is presented in this class constructs the foundation that students need for effective identification and measurement of organizational opportunities. This course is designed to help students gain an in-depth understanding of the key decision points, systems and processes, tools, and methods that facilitate Define and Measure phases of Six Sigma projects.

Course Resources

Required and recommended resources to complete coursework and assignments are found on the course [Reading List](#). Access is provided through the Reading List link in your online course as well as from the library homepage (“Find Your Reading List” button).

Note: Required resources that must be purchased by the student are tagged “Purchase from a vendor of your choosing.” Required resources with a direct link, “Available through CityU Library”, are available electronically at no cost to students.

Students in Canada may purchase course resources from the [Canada Bookstore](#), and students outside the U.S. and Canada should contact their advisor or textbook coordinator for additional information.

Course Outcomes

After completion of this course learners will be able to:

- Define, select, and calculate process capability indices.
- Describe and analyze sampling concepts including their bias, accuracy, and precision.
- Utilize gauge repeatability and reproducibility study to analyze measurement system capability.
- Develop a problem statement and evaluate it in relation to baseline performance.
- Select and apply Six Sigma tools and techniques to define an opportunity for improvement and measure process performance
- Determine when to apply the Six Sigma methodology as opposed to other problem-solving approaches.

Additional Information

CORE CONCEPTS, KNOWLEDGE, AND SKILLS

- Six Sigma and Organizational Strategy
- Lean Principles in the Organization
- Project Identification
- Project Management Fundamentals
- Team Dynamics and Performance
- Probability and Statistics
- Data Collection and Basic Statistical Analysis
- Process Capability
- Measurement System Management

Grading Scale

The grades earned for the course will be calculated using City University of Seattle’s decimal grading system, found in the current University Catalog (<https://www.cityu.edu/catalog/>).

Grading rubrics with details on how each assignment will be graded are located under *Assignments* and/or in *My Grades* in the online course menu. Students should review the rubric for each assignment prior to completing their work in order to understand how it will be assessed.

<i>Overview of Required Assignments</i>	<i>% of Final Grade</i>
Instructor Determined Activities (including participation)	30%
Quizzes (2)	30%
Individual Phased Project: Process Improvement - Define and Measure Phases	40%
TOTAL	100%

Course Assignments and Grading

The instructor will provide grading rubrics that will provide more detail as to how each assignment will be graded.

Instructor Determined Activities (Weekly Discussions)

Whether in class, online, or in a mixed mode setting, students will be graded on their participation in classroom discussions; their ability to present, explain, or defend alternative viewpoints; and the degree to which they have mastered the concepts and principles inherent in the study of business management. Written work will be assessed not only on relevance to the subject presented, but also on adherence to good written form, APA style, and professional presentation. The instructor may also choose to create additional activities to support learning in the classroom or online.

<i>Components</i>	<i>% of Grade</i>
Quality of Responses	50%
Quantity of Responses	30%
Timeliness	20%
TOTAL	100%

Quizzes (2)

The purpose of these formative assessments is to give students and the instructor the opportunity to assess the achieved level of learning progress. These results allow students to focus on those areas that need further clarification and enable the instructor to assist those students that need additional support. The questions will be selected from key domains of the Define and Measure phases of the DMAIC methodology. These multiple-choice assessments follow ASQ (American Society for Quality) exam format and are designed in a way to equip students with practical knowledge in two primary areas: (1) to define an organizational problem, opportunity for improvement, and stakeholder requirements, and (2) to measure process performance.

<i>Components</i>	<i>% of Grade</i>
Completion of Quiz by Due Date	15%
Accuracy of Solution	85%
TOTAL	100%

Individual Phased Project: Process Improvement - Define and Measure Phases

For this two-phase project, the instructor will provide a real-world scenario to students. This case will challenge students' understanding and application of key concepts of Six Sigma and DMAIC methodology. Students will utilize Minitab Software to analyze the information provided for the scenario. The project is designed to encourage students to apply proper methods, tools, techniques, and frameworks of Six Sigma to identify the most critical and impactful opportunities for improvement and to assess the performance of the corresponding process. Students will

submit a final report summarizing Minitab results, their interpretations, and conclusions in 4-6 pages using proper APA format. Additional resources are not required.

Required sections for the Process Improvement Define Phase include:

- a) Business Need/Strategic Alignment – this is a short (less than one page) introduction to the project identifying how the project meets the organization’s business need and strategic objectives.
- b) Project Charter: The project charter is the document issued by the project initiator or sponsor that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities. The Project Charter should include:
 - Project purpose or justification,
 - Measurable project objectives and related success criteria,
 - Project Scope
 - High- level requirements,
 - Assumptions and constraints,
 - High- level project description and boundaries,
 - High- level risks,
 - Summary milestone schedule,
 - Summary budget,
 - Stakeholder list,
 - Project approval requirements (i. e., what constitutes project success, who decides the project is successful, and who signs off on the project).
- c) Schedule – Develop a schedule to include the following:
 - Project Name
 - WBS deliverables, sub-deliverables, work packages and activities.
 - Predecessors at the work package or activity level
 - Identified critical path
 - Identified float
 - Milestones
- d) Risk Management - Create a risk plan which identifies the following:
 - Qualitative impact rating matrix
 - Qualitative probability rating matrix
 - Risk cube
 - Risk log for monitoring and controlling purposes
- e) Project Team and Communication Plan:
 - Define the communication processes for the project and how each stakeholder will receive project communications. This can include a Communication Matrix.

Required sections for the Process Improvement Measure Phase include:

- a) Baseline data collection plan: This is a short description of the baseline data collection plan to make sure that the data collected are meaningful and valid.
- b) Sampling Plans – Develop a Sampling Plan to include the following:
 - Ways of collecting data (i.e. check sheet, survey, documents, and records, etc.)
 - Type of data to be collected
 - Sample Size
- c) Graphical Summary: Use Minitab software to visually display, analyze, clarify, and interpret numerical data:
 - Histogram, Bar Chart
 - Time Series
 - Box Plot
 - Scatter Diagrams
 - Probability Plots
- d) Process Capability Analysis: Use Minitab to analyze how well a given process meets a set of specification limits:
 - Define Process Specifications
 - Analyze and interpret Process Capability Metrics (CP, CPK, PP, PPK)
 - Visually display Process Capability of the process
 - Calculate Process Six Sigma level using baseline data
- e) Measurement System, Precision and Accuracy, Analysis (MSA): Use Minitab to determine and interpret the amount of variation that exists within a measurement process:
 - Accuracy and Bias
 - Repeatability and Reproducibility (Gage R&R)
- f) Measure Phase Conclusion: Merge and summarize the highlights of Measure Phase

Components	% of Grade
Requirements	35%
Analysis	30%
Recommendations and Justifications	15%
Style Including Structure, Flow, Grammar, and Spelling	10%
APA	10%
TOTAL	100%

Course Policies

Late Assignments

A critical aspect of management is to meet predefined deadlines. Therefore, all assignments are expected to be submitted when due. No late assignments are accepted. Life-situations do occur. When an issue arises coordinate with the instructor prior to the assignment's due date and the due date may be adjusted. It is in the best interest of the student to ensure that all assignments are submitted on time.

Participation

Class participation will be evaluated during class. Participation includes being prepared for class discussions and contributing meaningful content when appropriate. It also includes individual effort contributed to the team project.

Professional Writing

Assignments require error-free writing that uses standard English conventions and logical flow of organization to address topics clearly, completely, and concisely. CityU requires the use of APA style.

University Policies

Students are responsible for understanding and adhering to all of City University of Seattle's academic policies. The most current versions of these policies can be found in the [University Catalog](#) that is linked from the CityU Web site.

Antidiscrimination

City University of Seattle and its staff and faculty are committed to supporting our students. We value equity, diversity, and inclusion as a way of life as well as the educational opportunities it provides. CityU will not tolerate any form of discrimination based on race, color, ethnicity, sexual orientation, gender identification, socioeconomic status, or religious values. If you have experienced any discrimination based on any of the above, we encourage you to report this to the University. Please report this to your instructor. If you do not feel safe reporting this to your instructor, please report to the Provost or to the Vice President of Student Affairs.

Non-Discrimination & Prohibition of Sexual Misconduct

City University of Seattle adheres to all federal, state, and local civil rights laws prohibiting discrimination in employment and education. The University is committed to ensuring that the education environment is bounded by standards of mutual respect and safety and is free from discriminatory practices.

In the U.S., the University is required by Title IX of the Education Amendments of 1972 to ensure that all of its education programs and activities do not discriminate on the basis of sex/gender. Sex include sex, sex stereotypes, gender identity, gender expression, sexual orientation, and pregnancy or parenting status. Sexual harassment, sexual assault, dating and domestic violence, and stalking are forms of sex discrimination, which are prohibited under Title IX and by City University of Seattle policy. City University of Seattle also prohibits retaliation against any person opposing discrimination or participating in any discrimination investigation or complaint process internal or external to the institution. Questions regarding Title IX, including its application and/or concerns about noncompliance, should be directed to the Title IX Coordinator. For a complete copy of the policy or for more information, visit <https://my.cityu.edu/titleix> or contact the Title IX Coordinator.

In Canada, in compliance with the British Columbia Human Rights Code, the Alberta Human Rights Act, WorksafeBC, and the Workers' Compensation Board of Alberta, the University believes that its environment should at all times be supportive and respectful of the dignity and self-esteem of individuals. Discrimination, harassment and bullying conduct, whether through person to person behaviour or via electronic communications such as email or social media is not acceptable and will not be tolerated. As an educational institution, it is our responsibility to cultivate an environment of excellence, equity, mutual respect and to recognize the value and potential of every individual. The University will take all necessary steps to meet or exceed the requirements of the law to prevent discrimination, harassment and bullying. The Respectful Workplace Policy for the prevention of discrimination, harassment and bullying policy and procedure can be found at <https://www.cityu.edu/discover-cityu/about-cityu/> under the Policies section or at <https://www.cityuniversity.ca/about/>.

Religious Accommodations

City University of Seattle has a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The University's policy, including more information about how to request an accommodation, is available in the University Catalog and on the my.cityu.edu student portal. Accommodations must be requested by the 20% mark of this course (e.g. day 14 of a ten-week course, day 7 of a 5-week course) using the Religious Accommodations Request Form found on the student dashboard in the my.cityu.edu student portal.

Academic Integrity

Academic integrity in students requires the pursuit of scholarly activity that is free from fraud, deception and unauthorized collaboration with other individuals. You are responsible for understanding CityU's policy on academic integrity and adhering to its standards in meeting all course requirements. A complete copy of this policy can be found in the [University Catalog](#) in the section titled *Scholastic Honesty* under *Student Rights & Responsibilities*.

Attendance

Students taking courses in any format at the University are expected to be diligent in their studies and to attend class regularly.

Regular class attendance is important in achieving learning outcomes in the course and may be a valid consideration in determining the final grade. For classes where a physical presence is required, a student has attended if s/he is present at any time during the class session. For online classes, a student has attended if s/he has posted or submitted an assignment. A complete copy of this policy can be found in the [University Catalog](#) in the section titled *Attendance Policy for Mixed Mode, Online and Correspondence Courses*.

Support Services

Disability Services Accommodations Statement

Students with a documented disability who wish to request academic accommodations are encouraged to contact Disability Support Services to discuss accommodation requests and eligibility requirements. Please contact Disability Support Services at disability@cityu.edu or 206.239.4752 or visit the [Disability Support Services](#) page in the my.cityu.edu portal. Confidentiality will be observed in all inquiries. Once approved, information about academic accommodations will be shared with course instructors.

Library Services

CityU librarians are available to help students find the resources and information they need to succeed in this course. Contact a CityU librarian through the [Ask a Librarian](#) service, or access [library resources and services online](#), 24 hours a day, seven days a week.

Smarthinking

As a CityU student, you have access to 10 free hours of online tutoring offered through Smarthinking, including writing support, from certified tutors 24 hours a day, seven days a week. Contact CityU's Student Support Center at help@cityu.edu to request your user name and password.