



Graduate Course Syllabus

QSO 625: Six Sigma for Black Belt Certification

Center: Online

Course Prerequisites

QSO 620

Course Description

This course teaches advanced concepts in Six Sigma while incorporating Lean Management tools. Students learn waste elimination, value stream mapping, Six Sigma roles and responsibilities, team management, and the various elements of the Define-Measure-Analyze-Improve-Control (DMAIC) phases of a Six Sigma project. The Design for Six Sigma (DFSS) approach to design a new process is also reviewed. The course is designed to help students prepare for a Six Sigma Black Belt certification exam. However, it neither guarantees to help satisfy the eligibility requirements for taking a Six Sigma Black Belt certification exam nor ensures success on a Six Sigma Black Belt certification exam.

Course Outcomes

- Help students gain hands-on experience with advanced Six Sigma and Lean Management tools
- Help students prepare a detailed plan for a real-world Six Sigma project
- Provide skills in diagnosing and analyzing problems causing variation and waste in manufacturing and service industry processes
- Help students prepare for a Six Sigma Black Belt exam

Required Materials

Using your learning resources is critical to your success in this course. Please purchase directly through the [SNHU Online Bookstore](#) rather than any other vendor. Purchasing directly from the bookstore ensures that you will obtain the correct materials and that the IT Service Desk, your advisor, and the instructor can provide you with support if you have problems.

The Certified Six Sigma Black Belt Handbook

Kubiak and Benbow

American Society for Quality

3rd Edition

2017

ISBN: 978-0-87389-941-3

Diversity, Equity, and Inclusion

As indicated in our core values, SNHU is committed to “embrace diversity where we encourage and respect diverse

identities, ideas, and perspectives by honoring difference, amplifying belonging, engaging civilly, and breaking down barriers to bring our mission to life.”

This may or will be reflected in SNHU’s curriculum as we embrace and practice diversity, equity, and inclusion (DEI) to provide the most transformative experience for our students, faculty, and staff. Because topics pertaining to DEI can be sensitive, please remember that embodying and practicing diversity, equity, and inclusion is one of our core values that you will encounter throughout the academic experience. In higher education, we are expected to think and engage critically. Use a growth mindset to embrace the diverse readings, course assignments, and experiences of your peers and faculty.

For more information about DEI at SNHU, please visit our website at the [Office of Diversity and Inclusion](#).

Instructor Availability and Response Time

Your class interaction with the instructor and your classmates will take place on a regular, ongoing basis. Your instructor will be actively engaged within the course throughout the week. You will normally communicate with your instructor in the weekly discussions or the General Questions discussion topic so that your questions and the instructor’s answers benefit the entire class. You should feel free, however, to communicate with your instructor via SNHU email at any time, particularly when you want to discuss something of a personal or sensitive nature. Your instructor will generally provide a response within 24 hours. Instructors will post grades and feedback (as applicable) within seven days of an assignment’s due date, or within seven days of a late submission.

Grade Distribution

| Assignment Category | Number of Graded Items | Point Value per Item | Total Points |
|----------------------------|-------------------------------|-----------------------------|-----------------------------------|
| Discussion Topics | 10 | 28 | 280 |
| Group Discussions | 10 | 20 | 200 |
| Short Papers/Diagrams | 9 | 35 | 315 |
| Final Paper: DMAIC | 1 | 200 | 205 |
| | | | Total Course Points: 1,000 |

This course may also contain practice activities. The purpose of these non-graded activities is to assist you in mastering the learning outcomes in the graded activity items listed above.

University Grading System: Graduate

| Grade | Numerical Equivalent | Points |
|--------------|-----------------------------|---------------|
| A | 93–100 | 4.00 |
| A- | 90–92 | 3.67 |
| B+ | 87–89 | 3.33 |
| B | 83–86 | 3.00 |
| B- | 80–82 | 2.67 |
| C+ | 77–79 | 2.33 |
| C | 73–76 | 2.00 |

| Grade | Numerical Equivalent | Points |
|-------|----------------------|--------|
| F | 0–72 | 0.00 |
| I | Incomplete | |
| IF | Incomplete/Failure * | |
| W | Withdrawn | |

* Please refer to the [policy page](#) for information on the incomplete grade process.

Grading Guides

Specific activity directions, grading guides, posting requirements, and additional deadlines can be found in the Assignment Guidelines and Rubrics section of the course.

Weekly Assignment Schedule

All reading and assignment information can be found within each module of the course. Assignments and discussion posts during the first week of each term are due by 11:59 p.m. Eastern Time. Assignments and discussion posts for the remainder of the term are due by 11:59 p.m. of the student's local time zone.

In addition to the textbook readings that are listed, there may be additional required resources within each module.

| Module | Topics and Assignments |
|--------|---|
| 1 | Elimination of Process Waste Reading: <i>The Certified Six Sigma Black Belt Handbook</i> , Chapter 25 1-1 Discussion: 5S Methodology 1-2 Group Discussion: Mistake-Proofing 1-3 Short Paper: Process Waste |
| 2 | Process Mapping Reading: <i>The Certified Six Sigma Black Belt Handbook</i> , Chapter 19 2-1 Discussion: Process Mapping and Lean Solutions 2-2 Group Discussion: Process Map 2-3 Diagram: Process Map |
| 3 | Six Sigma History and Leadership Reading: <i>The Certified Six Sigma Black Belt Handbook</i> , Chapter 1 and 2 3-1 Discussion: Deming's Principles 3-2 Group Discussion: Six Sigma Responsibilities 3-3 Short Paper: Armand Feigenbaum |
| 4 | Critical to Quality (CTQ) Requirements Reading: <i>The Certified Six Sigma Black Belt Handbook</i> , Chapter 3, 4, 5, and 10 (pp. 139-147) 4-1 Discussion: Voice of the Customer 4-2 Group Discussion: CTQ Requirements 4-3 Short Paper: Kano Model |

| Module | Topics and Assignments |
|--------|---|
| 5 | <p>The Define Phase</p> <p>Reading: <i>The Certified Six Sigma Black Belt Handbook</i>, Chapter 10 (pp. 133-136), 11, and 12</p> <p>5-1 Discussion: Selecting a Product for Six Sigma</p> <p>5-2 Group Discussion: The Define Phase</p> <p>5-3 Short Paper: Project Charter</p> |
| 6 | <p>The Measure Phase</p> <p>Reading: <i>The Certified Six Sigma Black Belt Handbook</i>, Chapters 14, 15, 16, 17, 18, and 19</p> <p>6-1 Discussion: Measure Phase</p> <p>6-2 Group Discussion: The Measure Phase</p> <p>6-3 Short Paper: Process Capability</p> |
| 7 | <p>The Analyze Phase</p> <p>Reading: <i>The Certified Six Sigma Black Belt Handbook</i>, Chapter 20, 21, 22, and 23</p> <p>7-1 Discussion: Six Sigma to Improve Business Curriculum</p> <p>7-2 Discussion: Final Paper: General Questions about the Final Paper</p> <p>7-3 Group Discussion: The Analyze Phase</p> <p>7-4 Diagram: CE Diagram</p> |
| 8 | <p>The Improve Phase</p> <p>Reading: <i>The Certified Six Sigma Black Belt Handbook</i>, Chapter 1 (pp. 24), 24, 25, and 26</p> <p>8-1 Discussion: Criteria Selection and Pugh Matrices</p> <p>8-2 Group Discussion: The Improve Phase</p> <p>8-3 Short Paper: Improved Process Map and FMEA</p> |
| 9 | <p>The Control Phase</p> <p>Reading: <i>The Certified Six Sigma Black Belt Handbook</i>, Chapter 27, 28, 29, and 30</p> <p>9-1 Discussion: Statistical Process Control for Service Processes</p> <p>9-2 Group Discussion: The Control Phase</p> <p>9-3 Short Paper: Control Plan and SPC</p> |
| 10 | <p>Design for Six Sigma (DFSS)</p> <p>Reading: <i>The Certified Six Sigma Black Belt Handbook</i>, Chapter 31, 32, 33, and 34</p> <p>10-1 Discussion: New Housing using DFSS at the University of Miami</p> <p>10-2 Group Discussion: DFSS</p> <p>10-3 Final Paper: DMAIC</p> |

Attendance Policy

Online students are required to submit a graded assignment/discussion during the first week of class. If a student does not submit a graded assignment/discussion during the first week of class, the student is automatically dropped from the course for non-participation. Review the [full attendance policy](#).

Late Assignments Policy

Meeting assigned due dates is critical for demonstrating progress and ensuring appropriate time for instructor feedback on assignments. Students are expected to submit their assignments on or before the due date. Review the [full late assignment policy](#).

SNHU Student Handbook

Review the [student handbook](#).

ADA/504 Compliance Statement

Southern New Hampshire University (SNHU) is dedicated to providing equal access to individuals with disabilities in accordance with Section 504 of the Rehabilitation Act of 1973 and with Title III of the Americans with Disabilities Act (ADA) of 1990, as amended by the Americans with Disabilities Act Amendments Act (ADAAA) of 2008.

SNHU prohibits unlawful discrimination on the basis of disability and takes action to prevent such discrimination by providing reasonable accommodations to eligible individuals with disabilities. The university has adopted this policy to provide for prompt and equitable resolution of complaints regarding any action prohibited by Section 504, the ADA, or the ADAAA.

For questions about **support services, documentation guidelines, general disability issues, or pregnancy accommodations**, please visit the [Online Accessibility Center](#) (OAC).

As a student, you must complete an interactive intake process, with supporting documentation, in order to be granted accommodations. Once reasonable accommodations are approved by the OAC, you will receive an accommodations letter. You are then responsible for sharing the letter with your instructor. Accommodations are not retroactive.

If you feel you've been subject to discrimination on the basis of disability, by any party, you may file a complaint or grievance. For more information on the ADA/504 Grievance Policy, go to the [Disability and Accessibility Services](#) website.

Academic Integrity Policy

Southern New Hampshire University requires all students to adhere to high standards of integrity in their academic work. Activities such as plagiarism and cheating are not condoned by the university. Review the [full academic integrity policy](#).

Copyright Policy

Southern New Hampshire University abides by the provisions of United States Copyright Act (Title 17 of the United States Code). Any person who infringes the copyright law is liable. Review the [full copyright policy](#).

SNHU Withdrawal Policy

Review the [full withdrawal policy](#).

Southern New Hampshire University Policies

More information about SNHU policies can be found on the [policy page](#).