



Clemson University - Center for Corporate Learning
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Education & Training Plan
Six Sigma Black Belt (CSSBB) Certificate Program with Externship

Student Full Name: _____

Start Date: _____ End Date: _____

Program includes National Certification & an Externship Opportunity
Mentor Supported

Six Sigma Black Belt (CSSBB) Certificate Program with Externship

Course Code: CLEM-B-CSSBB
Program Duration: 6 Months
Course Contact Hours: 375
Student Tuition: \$3,999

The Six Sigma Black Belt (CSSBB) Professional

The Six Sigma Professional program is designed for high-performance employees and leaders of business improvement projects. Whether in healthcare, finance, government, manufacturing or any other industry, Six Sigma Black Belt training is ideal for current professionals looking toward advancement in their current position as well as individuals looking to gain employment with any firm that utilizes these concepts and techniques. Experienced professionals who are able to master these techniques and gain certification in Six Sigma Black Belt are in significant demand by employers looking to ensure the most efficient use of their resources.

The Six Sigma Black Belt (CSSBB) Program

Building upon participants' existing knowledge and practice, the Six Sigma Black Belt course will help participants to master advanced statistical analysis tools, identify opportunities with solutions that can be implemented immediately and to deliver measurable results right away in order to increase an organization's return on investment. Participants who complete this course will be able to lead Six Sigma projects meant to enhance the capability of both internal and external processes in order to better meet customer expectations. With the comprehensive understanding of process analysis and improvement individuals gain from Six Sigma Black Belt certification, professionals with these skills with makes a significant impact on any organization and be well-positioned for advancement in their chosen fields. The Six Sigma Black Belt course presents an overview of the key concepts for the Certified Six Sigma Black Belt (CSSBB) exam. Students will explore processes and team management, operational metrics, and key tools and techniques to achieve process excellence.

Education and National Certifications

- Students should have or be pursuing a high school diploma or GED.
- There are no state approval and/or state requirements associated with this program.

- There are several National Certification exams that are available to students who successfully complete this program:
 - **American Society for Quality (ASQ) Certified Six Sigma Black Belt (CSSBB) Exam**
 - **NOTE:** Six Sigma Black Belt requires 2 completed projects with signed affidavits **OR** 1 completed project with signed affidavit and 3 years of work experience in one or more areas of the Six Sigma Body of Knowledge.
 - Candidates do NOT need to be a Certified Six Sigma Green Belt.
 - **Microsoft Office Specialist (MOS) Certification Exam.**

Program Objectives

At the conclusion of this program, students will be able to:

- Apply the Lean Six Sigma (LSS) model to create breakthrough in profitability and growth
- Manage projects by defining metrics, following and employing the Define-Measure-Analyze-Improve-Control (DMAIC) methodology
- Design effective teams to execute projects using tools & techniques of Lean Six Sigma
- Implement a sustainable process breakthrough using the DMAIC methodology
- Differentiate DMAIC and Design for Six Sigma (DFSS) frameworks
- Analyze a business process and engender support from executive management for using the tools and techniques relevant to the Lean Six Sigma methodology
- Sustain process breakthrough improvements in the control phase of the LSS initiative
- Use Microsoft Office

National Certification

Upon successful completion of this Clemson University program, students would be eligible to sit for the American Society for Quality (ASQ) Certified Six Sigma Black Belt (CSSBB) and the Microsoft Office Specialist (MOS) exams. Although there are no state approval, state registration or other state requirements for this program, students who complete this program at Clemson University will be prepared and are eligible to sit for this national certification exam. Students who complete this program are encouraged to complete the externship option with their program. Students who complete this program can and do sit for the MOS national certification exams and are qualified, eligible and prepared to do so. Clemson University works with each student to complete the exam application and register the student to take their national certification exam.

Externship / Hands on Training / Practicum

Although not a requirement, once students complete the program, they have the ability to participate in an externship and/or hands on practicum so as to practice the skills necessary to perform the job requirements of a professional in this field. Students will be assisted with completing a resume and/or other requirements necessary to work in this field. All students who complete this program are eligible to participate in an externship and will be placed with a participating organization near their location. Clemson University works with national organizations and has the ability to place students in externship opportunities nationwide.

Clemson University contact: If students have any questions regarding this program including national certification and externships, **they should call Juanita Durham of Clemson University at 864.656.3984 or via email at jdrhm@clemson.edu.**

Note: No refunds can be issued after the start date published in your Financial Award document.



About Clemson University!

Clemson Online, a unit reporting directly to the Provost, works closely with leadership teams across the University to develop, market, and deliver top-quality courses and programs in blended and online formats. The office provides vision, leadership, coordination, and expertise in support of faculty design, delivery, and evaluation of technology-enhanced, blended, and fully online courses and instructional materials. Dynamic, transformative, and unique eLearning opportunities characterize Clemson's approach to online teaching and learning.

Our Mission: Clemson Online provides strategic leadership for online education, emphasizing innovative teaching and superior learning outcomes to maximize student success in 21st-century academic and professional contexts.

Our Vision: Clemson Online will define the public web-grant university through measurable achievements in online education, research, and service.

The office is committed to pursuing strategic opportunities, providing supportive resources, promoting superior educational quality, and ensuring faculty involvement and responsibility in shaping Clemson's online future.



Clemson University and Pearson Education

The Clemson University's Office of Professional and Continuing Education eLearning programs were developed in partnership with Pearson Education to produce the highest quality, best-in-class content and delivery necessary to enhance the overall student learning experience, boost understanding and ensure retention. Pearson Education is the premier content and learning company in North America offering solutions to the higher education and career training divisions of colleges and universities across the country aimed at driving quality education programs to ensure student success. Please visit us at www.pearson.com.

About Pearson Education

Welcome to Pearson. We have a simple mission: to help people make more of their lives through learning. We are the world's leading learning company, with 40,000 employees in more than 80 countries helping people of all ages to make measurable progress in their lives. We provide a range of education products and services to institutions, governments and direct to individual learners, that help people everywhere aim higher and fulfil their true potential. Our commitment to them requires a holistic approach to education. It begins by using research to understand what sort of learning works best, it continues by bringing together people and organizations to develop ideas, and it comes back round by measuring the outcomes of our products.

Certified Six Sigma Black Belt (CSSBB) Program Detailed Student Objectives:

DEPLOYING LEAN SIX SIGMA

- Describe a Six Sigma business model
- Describe a Lean business model
- Demonstrate how LSS applies in service industries and manufacturing
- Explain how Lean and Six Sigma work together

LEAN SIX SIGMA LEADERSHIP

- Differentiate leadership from management
- Describe the four different styles of leadership
- Distinguish situations when each of the four styles of leadership apply
- Explain the leader's role in motivating people
- Explain the leader's role in a change process

LEAN SIX SIGMA STRATEGIC PLANNING

- Use the skills necessary to create a strategic plan
- Describe the importance of implementing a strategic plan
- Conduct a gap or SWOT analysis

LEAN SIX SIGMA TEAMS

- Describe the roles of Lean Six Sigma team members
- Identify required skills of Lean Six Sigma team members
- Explain how to give and receive appropriate feedback

IMPROVEMENT TO GENERATE PROCESS BREAKTHROUGH

- Describe metrics
- Use process metrics to measure business process performance
- Identify key performance metrics for business processes in a given enterprise
- Explain the six-step benchmarking process

LEAN SIX SIGMA PROJECT PLANS

- Explain how a Lean Six Sigma project is selected
- Use a project proposal to define a Lean Six Sigma project
- Explain how project plans guide Lean Six Sigma projects

KEY LEAN SIX SIGMA CONCEPTS

- Indicate the origins of waste in a process
- Explain the just-in-time system
- Describe how a pull-system supports just-in-time
- Describe how continuous flow processing supports just-in-time
- Calculate task time

LEAN SIX SIGMA WORK OPTIMIZATION

- Describe how line balancing affects work optimization
- Explain how setup time reduction affects work optimization
- Recognize how single piece flow supports work optimization
- Describe the relationship between level scheduling and work optimization
- Explain standardized work
- Describe the role of visual management in work optimization

INTRODUCING LEAN SIX SIGMA DESIGN OF EXPERIMENTS

- Identify the components of experiment design
- Define the terminology for experiment design
- Describe the structure of a design experiment
- Explain analysis of means and analysis of variance

Note: This program can be completed in 6 months. However, students will have online access to this program for a 24-month period.

MICROSOFT OFFICE Module

- Use an integrated software package, specifically the applications included in the Microsoft Office suite
- Demonstrate marketable skills for enhanced employment opportunities
- Describe proper computer techniques for designing and producing various types of documents
- Demonstrate the common commands & techniques used in Windows desktop
- List the meaning of basic PC acronyms like MHz, MB, KB, HD and RAM
- Use WordPad and MSWord to create various types of documents
- Create headings and titles with Word Art
- Create and format spreadsheets, including the use of mathematical formulas
- Demonstrate a working knowledge of computer database functions, including putting, processing, querying and outputting data
- Define computer terminology in definition matching quizzes
- Use the Windows Paint program to alter graphics
- Use a presentation application to create a presentation with both text and graphics
- Copy data from one MS Office application to another application in the suite
- Use e-mail and the Internet to send Word and Excel file attachments
- Demonstrate how to use the Windows Taskbar and Windows Tooltips
- Explain how copyright laws pertain to data and graphics posted on the Internet
- Take the college computer competency test after course completion
- Follow oral and written directions and complete assignments when working under time limitations

Note: Although the Microsoft Office Module is not required to successfully complete this program, students interested in pursuing free Microsoft MOS certification may want to consider completing this Microsoft Office Module at no additional cost.

System Requirements:

Windows Users:

- Windows 8, 7, XP or Vista
- 56K modem or higher
- Soundcard & Speakers
- Firefox, Chrome or Microsoft Internet Explorer

Mac OS User:

- Mac OS X or higher (in classic mode)
- 56K modem or higher
- Soundcard & Speakers
- Apple Safari

iPad Users:

- Due to Flash limitations, eLearning programs are NOT compatible with iPads

Screen Resolution:

- We recommend setting your screen resolution to 1024 x 768 pixels.

Browser Requirements:

- System will support the two latest releases of each browser. When using older versions of a browser, users risk running into problems with the course software.
- Windows Users: Mozilla Firefox, Google Chrome, Microsoft Internet Explorer
- Mac OS Users: Safari, Google Chrome, Mozilla Firefox

Suggested Plug-ins:

- Flash Player
- Real Player
- Adobe Reader
- Java