



BHARATI VIDYAPEETH UNIVERSITY, PUNE

(Established u/s 3 of the UGC Act, 1956 vide Notification No. F.9-15/95-U-3 of the Govt. of India)

‘A’ Grade Accreditation by NAAC

Social Transformation Through Dynamic Education...

SCHOOL OF DISTANCE EDUCATION

PROGRAMME GUIDE

OF

CERTIFICATE PROGRAMME IN SIX SIGMA

(CPSS)

Bharati Vidyapeeth Deemed University, Pune (India)

School of Distance Education

Course: Certificate Programme in Six Sigma

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The Certificate Programme in Six Sigma is 6 Months Course

1. Aims and objectives of the course: -

Six Sigma is a set of practices to systematically improve processes by eliminating defects. A defect is defined as failure of a product, process or service in meeting requirements of internal or external customers. The objective of the certificate course is to teach the students six sigma as a management methodology that can help thousands of professionals world over to reduce cycle times, increase productivity and improve quality and delivery of processes.

2. Nomenclature of the course: -

Sr. No.	Course No.	Subject
1	101	Six Sigma philosophy of Process Improvement
2	102	Customer centered business
3	103	Lean principles
4	104	Advanced statistics

3. Abbreviation of the course: CPSS

4. Name of the faculty: - Faculty of Management Study

5. Academic year in which course has been initiated: - 2011-12

6. Eligibility criteria for admission to the course:

10+2 or its equivalent\

The students pursuing graduate and post graduate programme from Bharati Vidyapeeth Deemed University can also take admission in the programme

Note: The following documents are required for eligibility compliance;

1. Marks statement of 10+2.

7. Teaching scheme of the course:

The Personal contact sessions and Seminars will be conducted at the Academic Study Centers during weekends (Saturdays or Sundays) and Public holidays. 40 hours will be devoted to these sessions for theory as well as practical work.

8. Structure of the course: - The Certificate Programme in Six Sigma is 6 Months Course consisting 6 courses.

9. Standard of Passing: -

In order to pass the course, a candidate will have to obtain minimum 40% marks in each head of passing.

To pass the examination, a student must obtain 50% of marks in aggregate for the entire examination.

10. Rules pertaining to supplementary / reappearing in examinations, if not passed the examination as per rules of passing

If a student fails to secure 40 % marks in internal / external evaluation separately in each head of passing then he / she must appear in the subsequent internal / external exam to pass in the examination

If a student fails to secure 50% marks in aggregate in the entire examinations then he / she must appear in the subsequent examination

11. Award of Classes: -

The award of class will be based on aggregate marks obtained by a student.

First class with Distinction	75% & above
First Class	60% & above but less than 70%
Second Class	50% & above but less than 60%
Fail	Less than 50%

12. Basis for allocation of marks for

- a) Internal Assessment: - 30%**
- b) Theory (External evaluation) 70%**

13. Procedure for conduct of internal assessment

Each student will have to submit two assignments for internal assessment for each paper.

14. Pattern of Examination Evaluation The evaluation in each head of Passing shall consists of 100 marks (70 marks for course end examination and 30 marks for Internal Assessment)

A candidate will be evaluated in each course depending on learning objectives and requirements of the course contents.

The details of course – wise mode of examination evaluation are as given below

Course end Examination	Subject Code / Course No.	Method of evaluation and Examination
	101 to 104	Written Paper of 3 hours duration with 70 marks at the end of the Course

15. Pattern of Written question paper

The final examination question paper has 2 sections i.e. I & II

Type of Question;

Section – I Subjective Type

Section – II Case Study

Six Sigma Philosophy of Process Improvement

Course 101

Unit 1:- What is six sigma, six sigma defined and explained, essentials of six sigma methodology, focus on engaging people and changing processes, principles of six sigma.

Unit 2:- Role of cultural change, definition of quality, parameters of customer satisfaction, impact on employees, competitive advantage.

Unit 3:- Process improvement, principles of process improvement, flexibility and cycle time reduction, tools for process improvement, analyzing process maps.

Unit 4:- Six sigma & lean production, lean six-sigma and services, implementation planning driving cycle, the seven management and planning tools.

Unit 5:- Process control, documentation and audits, statistical process control, SPC metrics, run charts, control charts, case studies.

Reference Books:-

1. Arthur, Jay (2003) *The six sigma: Instructor Guide*, Green Beet Training Made Easy, 2nd Edition, Macmillan India Ltd.
2. Chowdhury, Subir (2005) *Design for six sigma*, Dearbarn Publishing, Kaplan Professional Co. Ltd.

Customer Centered Business Development

Course 102

Unit 1: Design for six Sigma, Concept and Design Development, Overview of DFSS, Concept Development

Unit 2: Quality Function Deployment, the house of quality, detailed design and analysis, design for manufacturability, design failure mode and effects analysis

Unit 3: Reliability Prediction in DFSS, basic concepts and definitions, reliability measurements.

Unit 4: Optimization and variation, design of experiments, simulation of DFSS, design verification

Unit 5: Six Sigma Implementation, principles of six sigma implementation, project management, organizational culture and change management.

Reference Books:

- 1. Evans, James R. and Lindsay, W.M. (2005) An introduction to six sigma and process improvement, Cengage learning publication, India Edition.**
- 2. Juran, J.M. (1995) A history of Managing for Quality (Milwaukee, WI: ASQC Quality Press, 1995)**

Six Sigma & TQM Syllabus Learn Principles

Course 103

- 1. Unit 1: Six Sigma, definition, application, case study of Motorola and GE.**
- 2. Unit 2: Six-Sigma Team's problem solving process, DMAIC process, application in organizations case study in Indian context.**
- 3. Unit 3: Leadership qualities required, challenge to leaders at all levels, need to work as a Team , Team building exercises to enhance six sigma.**
- 4. Unit 4: Roles and responsibilities, key players executive leaders, champions, Master Black Belt, Black Belts, Green Belts, selecting black belts.**
- 5. Unit 5: How to sustain six sigma, infrastructure requirements, communication plan, company culture, signs of success, company cycles, reinforcement and control.**

Reference Books: -

- 1. What is Six Sigma? Pete Pande and Larry Holpp (2002), Tata McGraw Hill Publications.**
- 2. Brue, G. (2002) Six Sigma for Managers, Tata McGraw Hill Publications.**

Advanced Statistics

Course 104

Unit 1:- Introduction to statistics, criteria for business metrics, variation standard deviation descriptive statistics, statistical calculations with MSEXCEL Charts, graphs.

Unit 2:- Process capability, process width, control limit measurement of system evaluation, verification, calibration, process capability indexes, benchmarking.

Unit 3:- Question everything concept, why, what, when, where (5ws_, moving from criteria to metrics, process mapping, COPQ concept, ANOVA MANOVA, regression, correlation, root-cause analysis.

Unit 4:- Guidelines for metrics, problem with metrics, baselines, benchmarking, gap analysis.

Unit 5:- Assess the readiness for six sigma, real life survey (Project), planning and implementing concepts for successful six sigma.

Reference Books:-

- 1. Bruegleg (2003) six sigma for managers, Tata McGraw Hill Publishers.**
- 2. Pyzdek Thomas (2004) the six sigma project planner: A step by step guide to leading a six sigma project through DMAIC, Tata McGraw Hill Publishers.**