



Technical Videos from Institute of Quality and Reliability

<https://www.youtube.com/channel/UC9EZWioUA4xzTXT1BH7SFyg>

As on
09-Apr-23

SN	Group	Video title	Link	Duration
1	Reliability Concepts	Benefits of Reliability Engineering (CRE Learning Videos)	https://youtu.be/7OupKoS3_xA	4:03
2	Reliability Concepts	Hazard Rate and related concepts in Reliability Engineering	https://youtu.be/0a-BF036Di4	9:20
3	Reliability Concepts	Product Life Cycle (CRE Preparation Videos)	https://youtu.be/P5tK6Xb19_E	11:38
4	Basic Statistics	Using Casio FX 991 MS Calculator for Statistical Calculations	https://youtu.be/wt7HtT6Q0sM	10:07
5	Probability Distributions	Weibull Distribution Part-1	https://youtu.be/dxwlYZ-8_GM	11:52
6	Probability Distributions	Weibull Distribution Part2: Three-Parameter Weibull, B10 life, Characteristic Life	https://youtu.be/WbG5Z7irUu4	12:33
7	Probability Distributions	Exponential "The Memoryless" Distribution	https://www.youtube.com/watch?v=b57FzlGdCY4&t=530s	15:18
8	Probability Distributions	Normal Distribution and Z Score with Application Example	https://youtu.be/WR4-A_zVK28	10:05
9	Probability Distributions	Binomial Distribution and its applications	https://youtu.be/4XynfABrhVk	11:50
10	Probability Distributions	Lognormal distribution, Concepts and Applications	https://youtu.be/rLv1k_PxUOE	12:03
11	Probability Distributions	Poisson Distribution and its application using formula, tables and Excel	https://youtu.be/LpZvNNgSdZo	10:19
12	Probability Distributions	Understanding the Chi-square Distribution with simulation	https://youtu.be/IFAZhwOo8Rw	6:45
13	Quality Tools	Pareto Chart on Excel	https://youtu.be/BpV2-Ns9Gd8	19:13
14	Quality Tools	Histogram and Descriptive Statistics on Excel	https://youtu.be/jOquig5_l74	6:43
15	Life Data Analysis	Weibull Probability Plotting of complete data using median ranks with example	https://youtu.be/dsuLVS2yQ4U	18:07
16	Reliability Testing	Accelerated Life Testing (ALT) Part-4 Determination of Activation Energy for Arrhenius Model	https://youtu.be/9kKMr71Sndw	13:10
17	Life Data Analysis	Hazard plotting approach and case study to analyse failure data of shock absorbers	https://youtu.be/Ve4skYqVzU0	9:17
18	Life Data Analysis	Exponential Probability Plotting on Excel	https://www.youtube.com/watch?v=O6jeBV3cTtl&t=67s	9:34
19	Basic Statistics	Central Limit Theorem: Concepts and Simulation	https://youtu.be/Z9l_gmHCW9c	6:06
20	Reliability Techniques	MTBF Confidence Intervals using tables and Excel Template	https://youtu.be/QuglkwY1504	10:48
21	Reliability Techniques	Tolerance Intervals	https://youtu.be/BkcXHPmuoW4	11:40
22	Basic Statistics	Correlation and Regression on Casio fx991-MS Calculator and Excel	https://youtu.be/ufMh8lfZ3YQ	15:19
23	Reliability Testing	Reliability Growth: Concepts, Strategy, Duane Model and Application Case Study	https://youtu.be/3geXHUcxaSA	14:59
24	Reliability Testing	Accelerated Life Test (ALT Video-1)	https://youtu.be/fH9jS9hBnZQ	10:18
25	Reliability Testing	Accelerated Life Testing (ALT) Part-2	https://youtu.be/qvN9vOp4zWg	14:01
26	Reliability Testing	Accelerated Life Testing Part-3 (Case Study in Minitab Software)	https://youtu.be/vMEuvF_suls	12:01
27	Sampling Plans	Reliability Sampling Plans Part-1 (Basic Concepts)	https://youtu.be/OU6Y3MvRnlY	7:39
28	Sampling Plans	Reliability Testing Sampling Plans Part-2 (PRST and Fixed Length Plans)	https://youtu.be/Me75yHEf56E	11:53
29	Sampling Plans	Sample size in Reliability Testing: Part-2	https://youtu.be/Aa8FFh4GxCw	9:45
30	Sampling Plans	Acceptance Sampling Plans for Quality Control (Part-1)	https://youtu.be/CmYpqVn3Nol	16:56
31	Sampling Plans	Acceptance Sampling plan (Part-2)	https://youtu.be/ZPpiziY90t0	16:11
32	Hypothesis Testing	Hypothesis Testing Part-1: Introduction and One-Sample Z-Test	https://youtu.be/tEli7WuOxhQ	19:13
33	Hypothesis Testing	Hypothesis Testing Part-2: One Sample t-test, t-distribution, Degrees of Freedom and P-Value	https://youtu.be/euzzQU3n0UU	18:27
34	Design of Experiments	DOE-9: Degrees of freedom and Replication	https://youtu.be/ofZ8iOx96mw	6:04
35	Hypothesis Testing	Hypothesis Testing Part-3: Two Sample t-test with tables and using Excel	https://youtu.be/yavwQ0BCf48	16:11
36	Hypothesis Testing	Hypothesis Testing Part-4: The Paired t-test	https://www.youtube.com/watch?v=BrwdD40YBl&t=12s	12:14
37	Hypothesis Testing	Hypothesis Testing Part-5: Chi-square test of one-variance	https://www.youtube.com/watch?v=slG9oKQR-Gc	7:44
38	Hypothesis Testing	Hypothesis Testing Part-6: Chi-quare Test Contingency Tables	https://www.youtube.com/watch?v=4VkUrragN24	16:10



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39	Hypothesis Testing	Hypothesis Testing Part-7: One and Two-proportion Tests	https://youtu.be/KgpZGsgnTHY	15:49
40	Hypothesis Testing	Sample Size and Power in Hypothesis Testing	https://www.youtube.com/watch?v=XjKY8ELjupQ&pp=sAQA	10:37
41	ANOVA	ANOVA Part-1: Introduction, Concepts and F-Test	https://youtu.be/HnjK_PgrHQY	14:37
42	ANOVA	ANOVA Part-2: Partitioning Sum of Squares	https://youtu.be/XuPkDGjq_-8	13:11
43	Design for Reliability	Reliability prediction using Stress Strength Interference (Analytical Method)	https://youtu.be/WeTHHIF7tI4	11:54
44	Design for Reliability	Reliability Prediction using Monte Carlo Simulation	https://youtu.be/-G5DSzPIEjU	10:27
45	Design for Reliability	Statistical Tolerancing using Monte Carlo Simulation	https://youtu.be/f4eEgNPGG0I	7:43
46	Design for Reliability	Case Study in Tolerance Design of a Spring using Monte Carlo Simulation	https://youtu.be/8-taU-UKnLk	11:23
47	Reliability Techniques	Sample size in Reliability Testing Part-1 (One-shot Devices)	https://youtu.be/HTBfMK7PVQU	10:34
48	Design of Experiments	DOE-1: Introduction to Design of Experiments	https://youtu.be/pTAUa6qXV6E	12:36
49	Design of Experiments	DOE-10: Design of Experiments: Terms and Definitions	https://youtu.be/lZyH6Czee1E	9:59
50	Design of Experiments	DOE-2: Application of Design of Experiments for Spot Welding Process	https://youtu.be/cIXYKynq1-o	13:16
51	Design of Experiments	DOE-3: Design of Experiments: Coded and Uncoded values & establishing regression equation	https://youtu.be/W-H8b86zJcl	10:42
52	Design of Experiments	DOE-4: Case Study in Design of Experiments to maximize fatigue strength of Crankshaft	https://youtu.be/h6EaP3o4-sU	9:36
53	Design of Experiments	DOE-7: Analyse Factorial Design with Minitab: Case Study in Maximizing Fatigue Strength	https://youtu.be/g89Dsxk03U	15:05
54	Design of Experiments	DOE-5: Fractional Factorial Designs, Confounding and Resolution Codes	https://youtu.be/MQhf1KfHYCw	13:29
55	Design of Experiments	DOE-8: Linearity and Orthogonality in Experimental Design	https://youtu.be/60WRlk0HEFE	6:11
56	Design of Experiments	DOE-6: Case Study in Creating Full Factorial Design in Minitab: Optimization of Fatigue Strength	https://youtu.be/d1IUNrOKc2g	7:46
57	Design of Experiments	DOE-11: Fractional Factorial Design in Minitab	https://youtu.be/pBLt2V6HRzc	13:50
58	Confidence Intervals	Confidence Intervals Part-1 (Mean: Sigma known)	https://youtu.be/5fhQ9x-MrwM	14:36
59	Confidence Intervals	Confidence Intervals Part-2 (Mean: Sigma unknown)	https://youtu.be/7FSwDtazBZA	7:42
60	Confidence Intervals	Confidence Intervals Part-3 (Proportion and Std.Deviation)	https://www.youtube.com/watch?v=zrbVzW-0VtM&pp=sAQA	10:41
61	Life Data Analysis	Life Data Analysis of complete data using Minitab software	https://youtu.be/JuQ_AEtj1vE	8:37
62	Life Data Analysis	Life Data Analysis of Right Censored data using Minitab Software (revised video)	https://youtu.be/wBG9POVWjRc	10:33
63	Life Data Analysis	Warranty Data Analysis on Minitab	https://youtu.be/56jmZiWa8yc	14:38
64	Life Data Analysis	Reliability Analysis of life data with Multiple Failure Modes	https://youtu.be/LhvitUnUHcl	12:33
65	Special	Covid-19 RTPCR Test, Confusion Matrix and International Travel	https://www.youtube.com/watch?v=5AxzdQlcl-l&t=8s	16:39
66	Life Data Analysis	Reliability Estimation with Kaplan Meier Method	https://youtu.be/lpCi7VacPlw	13:50
67	Design of Experiments	Fractional Factorial Design with Center Point: Design and Analysis	https://youtu.be/CWhzhLnkhE8	28:18
68	SPC	SPC-1: Statistical Process Control Chart Selection, and Application Example on Excel	https://youtu.be/d62bT4DWPWs	24:29
69	SPC	SPC-2: SPC-2: Proportion Defective and Number Defective charts (p and np charts)	https://youtu.be/ipyhsszjDQg	13:54
70	RSM	Response Surface Designs: Part-1- Addition of Center Point	https://youtu.be/-D9sVhq-x2E	12:11
71	RSM	Response Surface Designs: Part-21- Central Composite Design with Application Example	https://youtu.be/f95B06bRfec	26:12
72	Physics of Failure	Miner's Rule for Cumulative Damage Theory and Fatigue Failures	https://youtu.be/tOVvqKidsTs	7:48
73	Life Data Analysis	B10 Life for Exponential Distribution	https://youtu.be/sGZDsHCAIRs	4:22
74	Life Data Analysis	B10 Life for Weibull and Lognormal Distribution	https://youtu.be/9BlJVOhcANo	7:12
75	Repairable systems	Homogeneous and Nonhomogeneous Process	https://youtu.be/y9b2tB9ukZw	12:36
76	Reliability Testing	Reliability Growth: Crow AMSAA Model	https://youtu.be/bbSS8_5aMes	10:45
77	Reliability Testing	Reliability Growth: Extended Crow AMSAA Model	https://youtu.be/SxVswTCNg7M	15:42



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78	Risk Analysis	Fault Tree Analysis (FTA)	https://youtu.be/iZPdBWS-eX8	13:30
79	Risk Analysis	FMEA Part-1: Planning and Preparing for DFMEA	https://youtu.be/HxC1FFlmhl	12:24
80	Risk Analysis	FMEA Part-2: Using DFEA Form and Rating Guidelines	https://youtu.be/kgKTcffO4Wk	20:24
81	Risk Analysis	FMEA Part-3: DFMEA Application Case Studies	https://youtu.be/4PRpigXhMMc	16:20
82	Reliability Modeling	Reliability Block Diagrams	https://youtu.be/D4bgQln-idQ	11:59
83	Maintainability	Maintainability and Availability	https://youtu.be/-i-JGv_fVmc	11:17
84	Design for Reliability	Reliability Allocation	https://youtu.be/dPjTcO-xDjg	12:03
85	Design for Reliability	Statistical Tolerancing	https://youtu.be/Yzrx68MOgtM	13:43
86	Design for Reliability	Introduction to Robust Design	https://youtu.be/7sPgqm03FzM	15:07
87	Design for Reliability	Parts Selection	https://youtu.be/pN35d-OsliE	12:26