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Course ID: S23

FAILURE MODES & EFFECTS ANALYSIS (FMEA)

Online course: Two 4-hour webinars with practical work

1. Introduction to FMEA

Developed by reliability engineers in the 1950's, FMEA is a team-based risk assessment approach that strives to identify all possible failure modes of a product or process, and to eliminate or mitigate the impact of those failure modes. It involves the establishment of a table of risks in priority order, and the execution of tasks and projects to (i) eliminate the risk, or (ii) reduce the probability or the risk occurring, or (iii) reduce the impact of the outcome of the risk if it does occur. FMEA is most effective when done at the design phase of a product or process.

The Lean Ireland series of two live and interactive webinars is facilitated with a cross functional team of product or process experts (and occasionally an outside pair of eyes) working on an actual organisation product or process.

2. What will I learn?

At the end of the workshop participants will:

- understand FMEA and its significance in product or process design;
- understand when to use FMEA;
- understand the cross functional nature of the exercise;
- be enabled to draft a FMEA table, and
- be enabled to draft an action plan following the completion of the FMEA table.

3. Preparation & Follow-up

A product FMEA involves inputs such as regulatory requirements, product specifications and drawings, raw material specifications, manufacturing instructions, product prototypes and samples, and evidence (written, photographs, site visit) of how and where the product will be used by the customer.

A process FMEA involves inputs such as process operating procedures, flowcharts and process maps, site visits, interviews with process users, regulatory requirements, and evidence (written, photographs, site visit) of how and where the process output will be used by the customer. If the company wishes, we can facilitate the workshop using a video of a sample process, rather than a company process.

In both product and process FMEAs the outcome is twofold (i) a table with a ranked order of risks, and (ii) an action plan to mitigate the risks.

The Lean Ireland facilitator will provide guidance in a preparatory online meeting, on the following issues, as required:

- FMEA policy within the organisation and relevant procedures;
- Selecting the topic of the FMEA – a key product or processes;
- Selecting the cross-functional team for training, and
- Communication with senior management & sponsors.

4. Webinar agenda

Webinar	Description
S23 E01 4 hours	• Introductions • Objective of an FMEA programme, FMEA sponsor, team and roles • Review of product or process – the subject of the FMEA • Gemba walk (video prepared in advance) • Specifications, process map, gemba walk and video review • Failure mode identification and RPN calculation • Action plan
S23 E02 4 hours	• RPN ranking: urgent vs important • Mitigating actions plans & owners • Assigning responsibility and tracking progress • Communication plan with snr. management • Next steps

Total contact hours = 8 hours over 2 4-hour webinars.

The course deliverables include:

- a partially completed FMEA review of a key organisation product or process;
- an action plan to complete the FMEA
- an action plan to develop a risk mitigation plan, and
- the knowledge to accomplish the above.

The webinars are to be hosted on a secure Lean Ireland learning platform. Webinars are spaced to accommodate the practical work being completed by the team in the designated FMEA subject, typically one to two weeks apart.

5. How will I be supported?

During this online course, you will

- a) be able to listen to and interact with the online course tutor and other participants;
- b) be able to ask questions and complete online quizzes to self-assess your understanding of the topic;
- c) be able to download all online course recorded webinars for your own future use;
- d) be able to download soft copy presentation files, with data sets and case studies, for your own future use, and
- e) receive help and guidance as you undertake practical FMEA work in your own workplace.

In addition to the contact hours on webinars, participants are required to work on organisation FMEA. On completion, you will receive a Lean Ireland certificate of completion.

Following completion of the FMEA, the Lean Ireland facilitator will be available to provide ongoing online mentoring as required, on the following issues:

- Programme management of FMEA outputs - segregating the urgent from the important;
- Interrelationship between FMEA projects and other projects in the organisation, and
- Repeating the FMEA: Why and how often?

6. Who should attend?

This course is suitable for all people who are interested in learning about team-based root cause analysis and risk mitigation on business critical processes and products. It is particularly suitable for design engineers, process engineers, research analyst and operations personnel.

7. Tailor your course

The FMEA course is customised to meet client needs. In advance of and during the workshop, data from the client's selected product or process, will be collected and reviewed. If the client would also like to incorporate assignments, or additional features (e.g. error proofing) that can also be arranged. Please contact us to discuss your needs.

8. Where can I find out more?

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