ASSET RELIABILITY PRACTITIONER®
[ARP-E] Reliability Engineer

This course is the best way to master reliability engineering. You will learn a broad range of essential topics.

The reliability engineer must be tremendously versatile.

They must understand a broad range of technical subjects and be capable of applying them all. If you are up for the challenge, the Asset Reliability Practitioner [ARP-E] "Reliability Engineer" course is just what you need.

You will have 5 days to master everything from defect elimination, asset strategy development with RCM, PMO, and FMEA, planning and scheduling, spares and materials management, condition monitoring, precision maintenance practices, reliability data analysis, criticality and Pareto analysis, root cause analysis and FRACAS, lubrication and asset care, and other topics.

There is a lot to learn, but to be a successful reliability engineer, you must learn it all. Fortunately, the Mobius Institute™ training techniques will ensure that you will not just survive the course, you will enjoy it, understand all the topics, and feel confident in the role of a reliability engineer.

THE ARP-E RELIABILITY ENGINEER CERTIFICATION PROCESS

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There are just four requirements to become certified:

1. You must attend this Mobius Institute course, or any other recognized training course that covers the same topics.
2. You must achieve a 70% score, or better, on the three-hour, 100-question, multiple-choice exam.
3. You must have a minimum of 24 months of experience in the industry involved in some way with reliability improvement.
4. Your experience must be verified by an independent person.

VPOWER Reliability

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Asset Reliability Practitioner® [ARP-E] Reliability Engineer

ARP-E FAST FACTS

Duration:
32 hours minimum: Typically delivered over 5 days

Format:
- Live public course
- On-site course
- Virtual online course
- Video distance learning online course

Compliance:
- Training: modeled on 18436-2 and ISO 18436-3, but there is no ISO standard for reliability personnel certification.
- Certification: according to ISO/IEC 17024 and modeled on ISO 18436-1
- Training: ISO 18436-3

Exam:
- Three hours
- 100 multiple-choice questions
- 70% passing grade
- Can be taken online or in-person at the course

Certification requirements:
- Training course completed
- 24-months of work experience, verified by an independent person
- Pass the exam
- Valid for 3 years

Pre-study:
- Access to the "Learning Zone" upon registration and payment
- Complete set of videos covering every topic
- An excellent way to be prepared and get the most from the course

Post-study:
- Continue to access the Learning Zone for 4-months after the course
- Continue learning, without charge, on MOBIUS CONNECT® via mobiusconnect.com

WHAT WILL I BE CAPABLE OF ONCE I COMPLETE THE COURSE?

The role of "Reliability Engineer" does not have a clear-cut definition. And different organizations utilize reliability engineers differently. However, after our course, you will have a solid understanding of a wide range of topics that will enable you to perform the tasks that are commonly performed by reliability engineers, and provide advice to people in the maintenance, engineering, and operations/production departments.

Reliability data analysis

You will have a good understanding of statistics, asset criticality ranking, Pareto analysis, Weibull analysis, and Crow-AMSAA. You will also learn about Reliability Block Diagrams (RBD) and the Monte Carlo method – and a few other topics. You will know whether you need to utilize those techniques: their benefits, the tools you will need, how you can utilize what you learned, etc.

With this information:

1. You will be able to work with other stakeholders to develop a thorough, robust criticality ranking. And with that, you can prioritize and justify a wide range of tasks
2. You will able to extract data and perform Pareto analysis to identify your bad actors and thus prioritize your improvement activities.
3. You will understand Weibull analysis, Crow-AMSAA, reliability block diagrams, and Monte Carlo analysis so that, if you had the tools to perform that analysis, they would make perfect sense. Additional training would be required to master those techniques.

Asset strategy development: FTA, RCM, PMO, FMECA

You must follow a structured process to ensure your asset strategy (maintenance plan) manages your risks and makes the best use of available resources. We spend a lot of time on these subjects so that you understand:

1. Why it is so important to develop a maintenance plan with a clear understanding of asset criticality, the function (and context) of the asset, and the failure modes.
2. How to avoid the common traps experienced with the use/implementation of these techniques.

Now, you *can* attend week-long courses on RCM, PMO, and FMECA, so there *is* more you can learn. Having said that, many of those courses also cover topics that are covered separately on our course, for example, condition monitoring, failure patterns, precision maintenance, etc. And on those courses, you will spend time with basic exercises putting what you have learned into practice with exercises, etc.

Therefore, the ARP-E course cannot make you an expert in every area of reliability, maintenance, design, and operations but you will have a very clear picture of how to utilize these techniques, you will be able to assess whether the techniques you used to develop your maintenance plan was adequate, you will be able to assess consultants who may help you in your implementation – and it will be a foundation to learn much more.

Condition Monitoring

You will understand how a "condition-based maintenance" program should work; how to prioritize the implementation, how to select the technologies, how to select the measurement periods, and so on. You will also learn about the technologies.

With this information, you will be able to assess your existing program, or how to select contractors, and how to improve what you are already doing.

But please remember, there is a LOT to know about each technology and how to successfully run the program. You will require additional training if you want to communicate with condition monitoring experts at a technical level. The training will, however, enable you to know what "good" looks like.

We do offer additional condition monitoring training if you are interested.

Lubrication management

One of the key topics for people with rotating machinery is how to manage lubricants and hydraulic fluids.

Once again, you can spend a week learning about this subject, and there are additional courses to gain true expertise. But with the ARP-E course, you will have a very clear understanding of the importance of selecting the right lubricants and how to avoid contamination. You will feel very comfortable with this subject. You will be able to take that knowledge to improve your current practices.

Precision maintenance

Precision maintenance is certainly one of the keys to improved reliability. You will learn enough about precision fastening (electrical and mechanical), shaft and belt alignment, and rotor balancing to identify whether your current practices meet the required high standards. You will be familiar with all the key terms so that you can engage with the craftspeople, contractors, and vendors of the equipment.

We do offer additional alignment and balancing training if you are interested.

Work and spares management

Work management (planning and scheduling) is another core component of a successful reliability program: it affects the quality of work, the efficiency of the work, the safe execution of the work, and the costs of executing the work. Spares management works hand-in-hand with work management – you can't have one without the other. Spares management reduces costs, improves work efficiency, and can dramatically reduce maintenance costs.

In this course, you will learn enough to know what "good" looks like. Normally the reliability engineer does not have responsibility for work and spares management, but you will understand that it plays a very important role in reliability improvement, and you will be able to assess whether what your organization is doing is "world-class" or whether there are "opportunities for improvement". You can then advise (with tact) the maintenance manager about changes that could be made.

Root cause failure analysis

There are lengthy courses you can take to master the various techniques (5-Why, Ishikawa, fault/causal tree, etc.), to utilize software, and more, but what you will learn on our course will set you up for success. You will understand:

3. What the techniques are and basically how to use them (5-Why, Ishikawa, KT, FTA, and others)
4. How to manage the projects
5. The human error factors
6. The human psychology side of solving problems and implementing solutions
7. How to manage the project (A3, 8D, 16J) to ensure the process has the desired outcome

But the truth is, we only get to spend approximately half-a-day on this important topic, so there is more to learn. But you will know what you know, and you will know what you need to learn so that you feel confident to perform root cause failure analysis.