



Course Offerings

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To obtain permission, please contact:

GP*Allied*, LLC.

4360 Corporate Rd, Suite 110

Charleston, SC 29405

www.gpallied.com

888-335-8276



GPAllied is the most diverse reliability and operations consulting and services company in the world. Combined, our unrivaled technical expertise, solutions portfolio and global reach help you achieve rapid bottom-line improvement and sustained cultural change.

GPAllied diversity and expertise result from joining together firms with experts in Maintenance and Reliability, Operational Excellence, and Workforce Development. This winning team allows us to offer you expertise in the fields of Lean, Reliability Engineering, Six Sigma, Condition Monitoring, Change Management, Maintenance Planning and Scheduling, Workforce Development and Maintenance Craft Skills training. However, only GPAllied can offer you solutions that fully integrate these specialties.

To ensure that GPAllied provides you with latest thinking and proven best practices, we have attracted recognized experts to our team, benchmarked best-in-class operations and connected with thought leaders throughout the industry. Furthermore, we ensure that our project team members have technical expertise, as well as expertise as trainers and mentors through a rigorous qualification process and the establishment of work execution standards.

GPAllied has modeled their deliverables based on the following core beliefs:

- The reason our clients are in business is to make money
- The first step to ensuring profitability is to have reliable “systems”
- The term “system” speaks to the combination of the people who operate the equipment, the processes they follow to operate the equipment and the equipment itself
- The definition of reliable is: the ability to perform a given task, at a stated rate, for a given period of time, under a given set of circumstances
- The organization must be motivated and prepared for any change to be sustainable
- Having successfully attained reliability, sustaining the improvements is paramount to on-going success
- Optimization is achieved through the use of a culture of continuous improvement
- Clients require a rapid return on investments

To that end, GPAllied offers you a complete suite of solutions in the following categories:

- Sustained Reliable Operations
- Reliable Capital Delivery
- Reliable Maintenance Execution

GPAllied prides itself on two (2) things: our passion for helping the client and the flexibility of delivery methods.

Our passion is driven by *the satisfaction of seeing our company help our customers build, utilize and realize the power of the Return on Asset Reliability (ROAR™).*

Our flexibility in delivery methods comes in any one of four (4) different ways. Each way specifically customized to meet the unique needs of the client. Those four (4) ways are:

Training

GPAllied offers all of our deliverables as classes for the client who prefers to implement using their own people.

Coaching

For the client who wants more than a training solution, but still prefers to implement using their own personnel, GPAllied offers a combination training/coaching package. The training class is augmented by a regimen of coaching and mentoring by our experienced consultants.

Services

Some clients prefer to contract out certain functions. GPAllied can deliver our services to the client in one of two forms:

- Project Based – GPAllied personnel are on-site for the duration of the project
- Full Time Equivalent (FTE) – GPAllied personnel are on-site, full time as contracted employees

Consulting

Whether you are starting a major change initiative or looking for the best way to improve performance, GPAllied's consultants guide you as you set your direction, design and deploy your approach, and realize results.

The GPAllied vision is to be the premier global provider of sustainable transformation driving improved customer operational and reliability excellence. To that end, we believe the best way to make our vision a reality is to optimize customer business performance through customized solutions utilizing our experienced people, innovative processes, and proven technologies.



Thus achieving operational and reliability excellence sustained through the use of cultural change management with the relentless pursuit to deliver the highest return on investment.

GP*Allied's* expert team provides unparalleled solutions. You can count on us to provide the following:

- A strong foundation to ensure that your organization's systems reliably meet customer needs with lower cost
- A roadmap to build upon that foundation to streamline your processes and help you achieve a culture of sustained continuous improvement
- Effective training to develop your people
- Consultants and trainers with technical expertise, interpersonal skills, and drive to work effectively with your team
- Solutions customized to fit your needs, drawing from a diverse range of methods and services
- A rapid return on your investment

Training Classes

At GP*Allied*, we understand that you are not interested in "training for training's sake". You need hard-hitting, impactful training that addresses the specific need of your employees, delivers value for your training dollars, and produces bottom-line results.

That's what we deliver.

In today's increasingly competitive business environment, your training investment only makes sense if it yields a tangible improvement in KPI's like:

- Production efficiency
- Employee retention
- Labor costs
- Asset downtime
- Safety
- Quality control

With over 200 courses that can be easily customized to your equipment and processes, we are the one-stop shop for all of your technical and change management training needs. We offer these classes on-site at your facilities, for your employees; or periodically around the world on an open-enrollment basis.

When you select us for your training, you receive:

- Training from practitioners and implementers who are also skilled trainers.
- Courses designed with your learning objectives in mind using professional instructional system design combined with our subject-matter expertise.

You can obtain most of the courses in a format that works best for you:

- **Off the Shelf**— you can select our standard training if a generic course suits your needs.
- **Customized** — you can ask us to make minor modifications to better fit your organization's existing terminology and culture (which we can do quickly and cost-effectively), or you can ask us to develop a truly custom curriculum.

- **Public Courses** — you may decide to attend one of our expanding list of publicly offered courses, including those offered through Macomb Community College Workforce Development Institute in Warren, MI.
- **e-Learning** — for certain courses; you can select e-Learning, or a blended solution of e-Learning, instructor-led training, and coaching.

Shaft and Coupling Alignment

DESCRIPTION

This course provides information on the importance of proper alignment and alignment methods, cause of misalignment and how to correct for error such as soft foot and thermal growth using dial indicators, and coupling alignment using dial indicators and lasers where applicable. There are hands-on exercises for shaft and equipment alignments. Upon completion of this course, the participants will be able to successfully identify and correct a given source of misalignment using dial indicators or lasers where applicable, the participant will also be able to demonstrate an alignment exercise using given tools and equipment.

RECOMMENDED AUDIENCE

This course is recommended for electrical and mechanical maintenance technicians.

YOU WILL LEARN:

- Explain the importance of shaft alignment
- Describe the symptoms of misalignment
- Define the goal of the alignment process.
- Understand the most common causes of misalignment.
- Explain the effects of misalignment on machines.
- Describe the relationship between vibration and shaft alignment
- Describe the tools used in alignment work.
- Explain the importance of conducting a thorough inspection of the machine prior to attempting to perform an alignment
- Describe the effects of not conducting a thorough inspection of the machine prior to attempting to perform an alignment
- Explain the term “soft foot.”
- Describe the effects soft foot has on a machine.
- Describe the various types of soft foot.
- Explain how to measure and correct soft foot.
- Describe the phases of alignment and the acceptable methods of completing them.
- Make accurate adjustments in each phase of alignment (lab assignment).
- Describe the various methods available to perform alignment.
- Explain the advantages and disadvantages of each method.
- Measure bar sag.
- Perform an alignment using the reverse dial indicator method.
- Make accurate elevation changes on the machine.
- Make controlled horizontal moves.
- Describe acceptable solutions for the problem of a machine becoming bolt bound.
- Explain the importance of thermal growth in a machine.

- Calculate thermal growth.
- Determine acceptable limits of an alignment.
- Describe factors that can affect the limits of an alignment.
- Be aware of various alignment procedures for equipment other than horizontally mounted motors and pumps.
- Perform an alignment on machines with multiple feet.
- Perform an alignment on multiple machine trains.
- Perform an alignment on non-rotational machines.
- Perform an alignment on machines with jackshafts.
- Perform an alignment on machines with an unobtainable indicator reading.

Upon completion of this section, you will be able to perform the following:

- Explain the purpose of a coupling
- Explain the difference between a rigid and flexible coupling.
- Explain the following terms as they relate to a coupling; Hub, Shaft, Key, Match Marks, Bore, Gap.

CLASS DURATION

40 hours