



DOE PROJECT MANAGEMENT NEWS

Promoting Project Management Excellence

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Director's Corner

Best Practice 1, Capturing all activities, is discussed in the article on page 2. And don't forget to check out the Snippet of the Month, *DOE O 413.3 Self Governance*.

In our April 2022 newsletter, we announced the release of the *Integrated Program and Project Management Maturity and Environment Total Risk Rating (IP2M METRR)* tool; quite the acronym. It is a mouthful. This month, we start a series of articles examining the ten subprocesses evaluated to determine the Maturity Assessment (MA) rating, and the four factors impacting the Environment Assessment (EA). One of the most interesting findings of the study leading to the development of the *IP2M METRR* tool was the relationship between the effectiveness of an earned value management system (EVMS), or any other management system, and the environment in which it operates. EA Factor 1, Culture, is discussed in more detail in the article on page 5.

Finally, it is never too late to continue your professional development and earn continuous learning points. This quarter, the PMCDP is offering a wide variety of courses, from *Planning for Safety in Project Management* to *Advanced Risk Management*. A complete listing of 4th quarter course offerings can be found on page 8.

Keep Charging!

Paul Bosco

“Stay on schedule!” This is easier said than done. DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets (Order)*, provides program and project management direction for the acquisition of capital assets with the goal of delivering projects within the original performance baseline (PB), cost and schedule, and fully capable of meeting mission requirements. Together with the associated 413 series guides, the Order provides insight for the implementation of best practices from across government and industry. Correspondingly, the General Accountability Office (GAO) has published several best practice guides, including one on schedule, that can be used across the federal government to develop, manage, and evaluate capital programs and projects. The Order requires projects develop and maintain an integrated master schedule (IMS) consistent with best practices identified in the National Defense Industrial Association’s (NDIA) Planning & Scheduling Excellence Guide (PASEG), and the GAO’s Schedule Assessment Guide (GAO-16-89C). This month’s newsletter kicks off a series of articles that will examine each of the ten best practices captured in GAO-16-89C.

GAO Best Practice #1: Capturing All Activities for Project Schedules

Rick Blaisdell, Office of Program Analysis (PM-20)

The importance of a reliable, high-quality schedule cannot be overstated. A well-planned schedule is a fundamental management tool that can help a project team use project funds effectively by specifying when work will be performed in the future and measuring project performance against an approved plan. As a model of time, an integrated and reliable schedule can show when major events are expected as well as the completion dates for all activities leading up to them, which can help determine if the project’s performance baseline is realistic and achievable. Additionally, a well-formulated schedule can facilitate an analysis of how change affects the project. Accordingly, a schedule, used properly, allows the project team to anticipate potential cost and schedule growth issues, mitigate unplanned problems, and accurately forecast final costs.

DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, requires projects to develop, maintain, and document an integrated master schedule (IMS) in a manner consistent with the methods and best practices identified in the National Defense Industrial Association (NDIA) *Planning and Scheduling Excellence Guide* (PASEG) and the *GAO Schedule Assessment Guide*, GAO 16-89G (GAO).

The *GAO Schedule Assessment Guide* cites four characteristics of a reliable schedule: (1) comprehensive, (2) well-constructed, (3) credible, and (4) controlled. The GAO guide crosswalks those characteristics to the best practices. In addition, The *Schedule Assessment Guide*, <https://www.gao.gov/assets/gao-16-89g.pdf>, provides ten best practices to help project teams ensure that a project schedule is reliable. These ten best practices are associated with developing and maintaining a reliable, high-quality schedule. The reliability of the schedule helps determine the credibility of the project’s performance baseline. This article focuses on Best Practice #1, **Capturing All Activities**. All ten GAO best practices are listed in Table 1 for your information. Best Practices 2 through 10 will be discussed in future PM Newsletter articles.

GAO Best Practice #1

The Government Accountability Office (GAO) Best Practice #1: Capturing All Activities. The schedule should reflect all activities as defined in the program’s work breakdown structure (WBS), which defines in detail the work necessary to accomplish a project’s objectives, including activities both the owner and the contractors are to perform.

<https://www.gao.gov/assets/gao-16-89g.pdf>

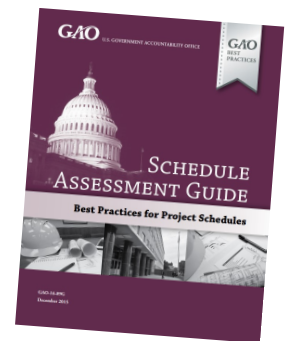


Table 1. GAO Schedule Assessment Guide Ten Best Practices for Developing and Maintaining a High Quality Schedule

| | |
|-------------------|---|
| Best Practice #1 | Capturing all activities |
| Best Practice #2 | Sequencing all activities |
| Best Practice #3 | Assigning resources to all activities |
| Best Practice #4 | Establishing the duration of all activities |
| Best Practice #5 | Verifying that the schedule can be traced horizontally and vertically |
| Best Practice #6 | Confirming that the critical path is valid |
| Best Practice #7 | Ensuring reasonable total float |
| Best Practice #8 | Conducting a schedule risk analysis |
| Best Practice #9 | Updating the schedule using actual progress and logic |
| Best Practice #10 | Maintaining a baseline schedule |

Continued on Page 3.

So, what does Best Practice #1, **Capturing All Activities**, really mean when it comes to a project schedule? According to the *Schedule Assessment Guide*, using the work breakdown structure (WBS) as a basis, all activities are captured in the schedule, including all work necessary by the owner and contractors. The schedule should reflect all effort necessary to accomplish the deliverables described in the WBS. Depending on how much is known, some sets of activities will be scheduled in detail and others will be planned in long-duration planning packages.

A schedule represents an agreement on how to execute a project. As such, it should reflect all activities (for example, steps, events, required work, and outcomes) that will accomplish the deliverables described in the project’s WBS. An IMS should be based on critical path method scheduling that contains all the work represented in logically linked activities representing the execution plan. At its summary level, the IMS gives a strategic view of activities and milestones necessary to start and complete a project.

Figure 1 shows a notional summary level schedule that can provide that strategic schedule perspective for a project. Figure 2 (page 4) shows a notional detailed view schedule that can provide significantly more detail on a project than a summary level schedule does. At its most detailed, the schedule clearly reflects the WBS and defines the activities necessary to produce and deliver all aspects of the project. The detail should be sufficient to identify the longest path of activities through the entire project.

The pitfalls of not capturing all activities in the schedule are wide-ranging and can be severe. The IMS should reflect all effort necessary to successfully complete the project, regardless of who performs it. Failing to include all work for all deliverables, regardless of whether they are the government’s or the contractor’s responsibility, can hamper the project team’s and stakeholder’s complete understanding of the plan to progress the project toward a successful conclusion. If activities are missing from the schedule, then other best practices will not be met.

Figure 1. Example Notional Project Schedule (Summary Level)

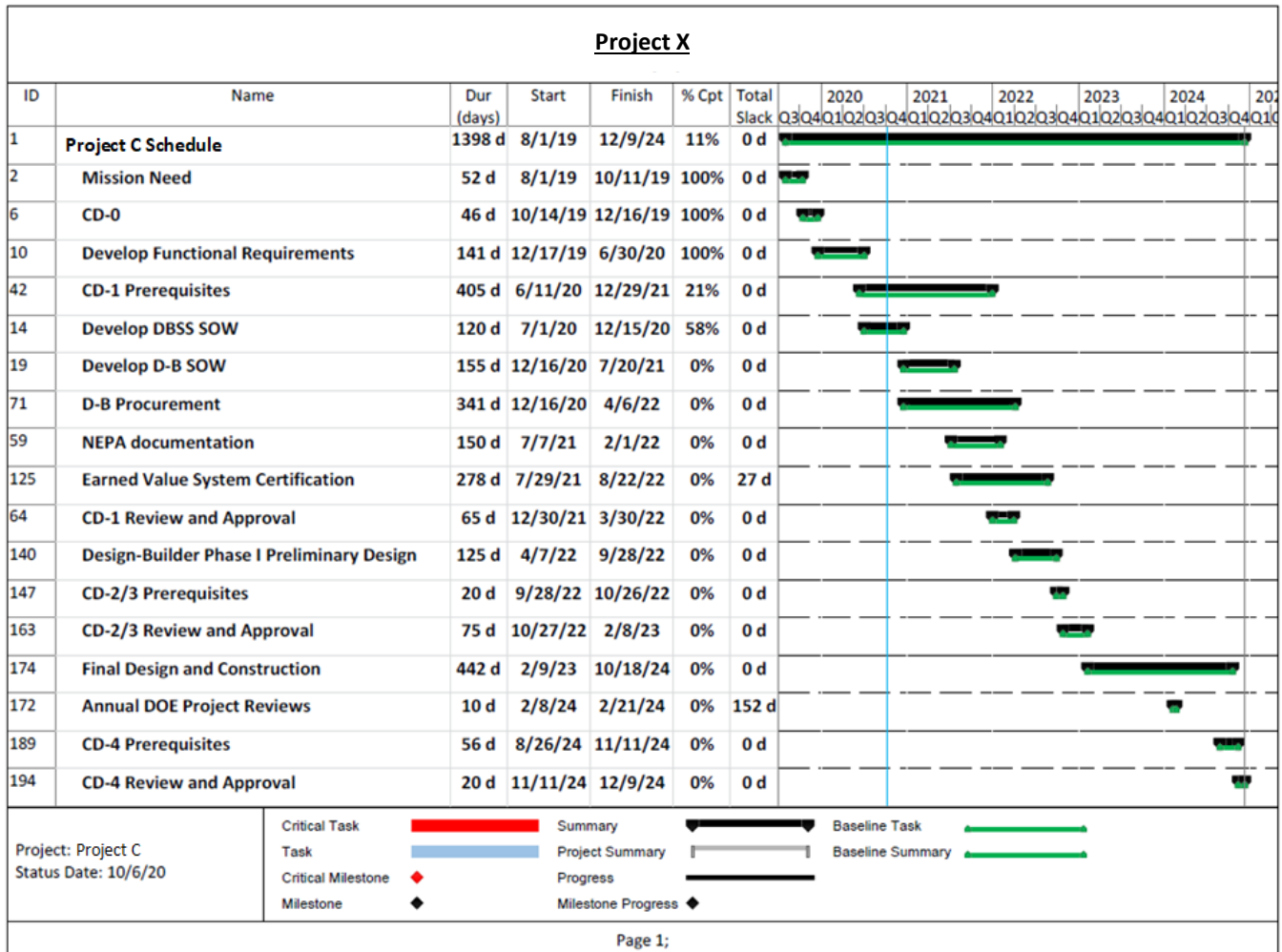
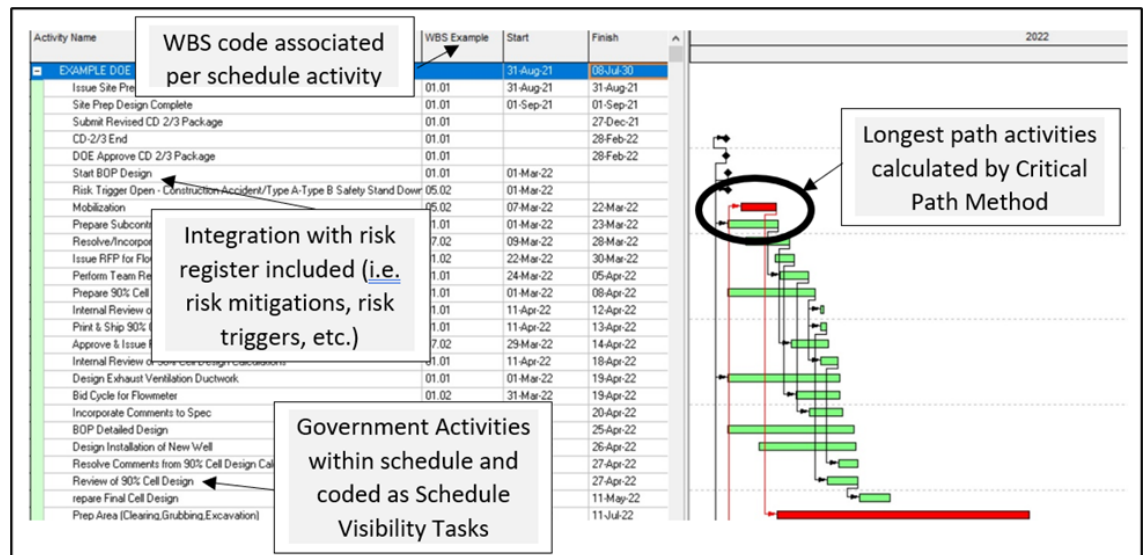


Figure 2.
Example Notional Project
Schedule (Detailed View)

Unless all necessary activities are accounted for, no one can be certain whether all activities are scheduled in the correct order, resources are properly allocated, the critical path is valid, or a schedule risk analysis will account for all risk.



Because the schedule is used for coordination, the absence of necessary elements will hinder coordination, increasing the likelihood of disruption and delay. A comprehensive IMS should reflect all the project's activities and recognize that uncertainties and unknown factors in schedule estimates can stem from, among other things, data limitations.

A project IMS is not simply the prime contractor's schedule; it is a collection point for all work scopes required to complete the project. It is a comprehensive plan of all government, contractor, subcontractor, and key vendor work that must be performed. The schedule must account for related government effort such as design reviews, milestone decisions, receipt of government-furnished equipment, and testing. It is also important to include the government effort that leads to the final acceptance of a project—for example, certain activities that only the government can perform, such as reviewing and accepting deliveries, obtaining permits, and performing various project reviews.

The overall size of the IMS depends on many factors, including the complexity of the project and its technical, organizational, and external risks. The schedule should not be so detailed as to interfere with its use. However, the more complex a project is, the more complex the IMS may become.

Generally speaking, the level of detail in the schedule should reflect the level of information available on the portion of the work that is planned to be accomplished. Both the government and the contractor must define the effort required to complete the project in a way that fully details the entire scope and planned flow of the work.

In this manner, the IMS is defined to the level necessary for executing daily work and regularly updating the project. Schedules that are defined at too high a level may disguise risk that is inherent in lower-level activities. In contrast, too much detail in a schedule will make it difficult to manage progress and may convolute the calculation of critical paths.

In conclusion, capturing all activities in your project schedule is critical for a variety of reasons as discussed in this article. Here are some key points for capturing all activities in your schedule as provided in the GAO *Schedule Assessment Guide*:

- A WBS is the cornerstone of the project schedule. Its elements are linked to one another with logical relationships and lead to the end product or final delivery. The schedule clearly reflects the WBS and defines the activities necessary to produce and deliver each product.
- The schedule reflects all effort (steps, events, work required, and outcomes) to accomplish the deliverables described in the project's work breakdown structure.
- The IMS includes planning for all activities that have to be accomplished for the entire duration of the project, including all blocks, increments, phases, and the like.
- The IMS includes the summary, intermediate and all detailed schedules. The same schedule serves as the summary, intermediate, and detailed schedule by simply rolling up lower levels of effort into summary activities or higher-level WBS elements.
- The government-owned detailed schedule includes all activities the government, its contractors, and others must perform to complete the work, including receipt of government-furnished equipment or information, deliverables, or services from other programs.

Understanding the Cultural Environment for EVMS Implementation (Part 1 of 4)

Mel Frank and Dave Kester, Office of Project Controls (PM-30)

Effective leadership is critically important to establishing a cohesive project environment. Project leaders make choices, and those choices have real consequences on a project's ability to achieve its performance objectives. Whether it is making decisions about selecting the project team or how to manage and control project resources, we must understand how our choices and attitudes influence our environment and, by association, the chances for our projects having favorable outcomes. A project's culture represents the shared norms, beliefs, values, and assumptions of its team. Understanding the unique aspects of a project's culture and developing an appropriate environment was the focus of a government-industry joint research study (the Study) which started in 2019, sponsored by the Office of Project Management (PM), and led by Arizona State University (ASU), [IP2M METRR \(ASU EVMS Study\) | Department of Energy](#).

Arguably, the most significant finding coming from the Study is the strong relationship between the effectiveness of an earned value management system (EVMS), or any other management system, and the environment in which it operates. The notion of environment refers to all circumstances and conditions both internal and external to the project during its life cycle. Many of these are under the control of the project that directly influences its performance. The environment can vary significantly in type and nature depending on the organization and culture involved. The factors affecting a project environment can be classified as tangible and intangible. While tangible factors will be more visible for a project, intangible factors are often less visible and require constant attention. For example, the importance of intangible factors like team cohesion, the quality of governance, and the genuine commitment toward the implementation of an EVMS cannot be overstated. While intangible factors are not physical, per se, like a documented procedure or a management toolset, they play an important role in the effectiveness of an EVMS.

The Study's introduction of environmental factors and their influence and impact on the maturity (and, by default, the effectiveness) of an EVMS provides a material change from past thinking and approaches.



New realities are forcing customers, contractors, and stakeholders to adapt their execution strategies and transform how their organizations use people, processes, and technology to develop capabilities to meet their unique management needs. The Study found that a solution to reducing the risk of failing to achieve schedule, budget, and performance goals begins by embracing a culture that fosters shared values like trust, honesty, transparency, and stewardship.

The Study created the Integrated Project/Program Management (IP2M) Maturity and Environment Total Risk Rating (METRR) using EVMS, a novel method for assessing a spectrum of environment and implementation maturity factors impacting the implementation of mature and effective integrated project management processes. The factors center on the EIA-748 EVMS standard but also consider other authoritative sources, including the Project Management Institute (PMI) PMBOK Guide, International Organization for Standardization (ISO) Standard 21508, Department of Defense Earned Value Management System Interpretation Guide (EVMSIG), and other evidence-based guidance. Using IP2M METRR, projects can gauge the efficacy of their management methods and practices in achieving optimum performance and desired outcomes. IP2M METRR helps projects identify the various ways the environment and implementation maturity interact and interdepend to facilitate decision-making, problem-solving, and continuous process improvements. By comparing implementation maturity and environment using a matrix diagram, for example, a reviewer can easily depict the relationship of the project's environment to the maturity of the EVMS side by side. The Study found a strong positive correlation (Pearson $r=0.83$) between the two variables, in which both move in the same direction and the project environment is dominant.

Continued on Page 6.

Taking the time to address the cultural environment during a project's upfront project planning phase and monitored regularly thereafter is one of the most impactful choices a project leader can make. Unfortunately, the choice to do this has been rare. In part, it is believed that this is because a documented method for assessing a project's culture in the context of implementing an EVMS as its primary management and control system has not existed. The following seven culture environmental factor definitions were developed by the Study to support their consistent use. The descriptions and definitions developed by the Study are purposely not all-inclusive and are meant to allow for their supplement when appropriate. The culture factors are further described by checkpoints. The culture category and factors are as follows:

CATEGORY

1 CULTURE

Culture is, by definition, the display of human behaviors. Culture is the mix of common assumptions, values, and beliefs (or the lack thereof) that governs how people behave and interact with one another and the management systems of a project. It is where an organization's values and beliefs can either enable or hinder the implementation of a compliant EVMS. A project's culture includes seven environmental factors to be considered (1A – 1G).

FACTORS

- 1A The contractor organization is supportive and committed to EVMS implementation, including making the necessary investments for regular maintenance and self-governance.
- 1B The project culture fosters trust, honesty, transparency, communication, and shared values across functions.
- 1C The customer organization is supportive and committed to the implementation and use of EVMS.
- 1D Project leaders make timely and transparent decisions informed by the EVMS.
- 1E The project leadership effectively manages and controls change using EVMS, including corrective actions and continuous improvement.
- 1F Effective teamwork exists, and team members are working synergistically toward common project goals.
- 1G Alignment and cohesion exist among key team members who implement the EVMS, including common objectives and priorities.

Following is an example of factor checkpoints (partial listing) for FACTOR 1A, which can be used to more objectively evaluate the factor.

CHECKPOINT

- i. The contractor team is in place to include corporate leadership, execution/operations personnel, oversight personnel, and support staff and has a demonstrated genuine belief in the intrinsic value of the EVMS to position the project for success.

Check to ensure that the contractor has established an integrated project team (IPT) composed of representatives from appropriate functional disciplines. Next, check to ensure that the team has a genuine belief in the intrinsic value of the EVMS that is manifested in both words and actions. If support for genuine implementation of the EVMS is superficial, then unacceptable behaviors will become widely accepted and the norm. Confirm that the interviewee has a correct understanding of the purpose and objectives for the EVMS and that they have demonstrated consistency in their actions for implementing the EVMS over an extended period. For example, the interviewee should be able to articulate that the EVMS is a system of systems/processes relied upon for the integration of project scope, schedule, and budget; and that Earned Value Management (EVM) is the preferred project management technique for objectively measuring performance and progress. The interviewee should be able to adequately demonstrate the repeated use of documented EVMS procedures and processes and importantly the use of EVMS data and information for decision-making. Finally, check to ensure that EVMS/EVM is included in the project's acquisition management strategy.

CHECKPOINT

- ii. The contractor team follows an integrated project management strategy to identify and manage risks using the EVMS that would otherwise negatively impact a well-formed baseline plan.

Check to ensure that the contractor has established the necessary interface between the project risk management process and the EVMS. Risk culture encompasses the general awareness, attitudes, and behaviors of leaders and managers toward risk(s) and how risk(s) is managed within the organization.

Continued on Page 7.

EVMS Training Snippet of the Month

EVMS Training Snippet 1-4: Self Governance

Click [here](#) to view EVMS Training Snippet 1-4: Self Governance video. Click [here](#) to view EVMS Training Snippet 1-4: Self Governance PowerPoint Slide.

Summary: This Training Snippet is sponsored by the United States Department of Energy's Office of Project Management. This Snippet provides an overview of Self-Governance, and how the results benefit both the contractor and DOE. The purpose is to provide a common understanding within DOE and among DOE contractors, and to provide consistency.

Continuous Learning Points (CLPS): Reviewing one hour of snippets will equate to one CLP. To receive credit, FPDs can submit a CLP request under the PMCDP menu in their ESS account. All others may send an email (indicating the snippets viewed) through their respective supervisor to [DL-PM-40](#) to receive a certificate with the appropriate CLPs awarded.

You can find additional EVMS Training Snippets and PowerPoint slide downloads at the following links: <https://go.usa.gov/xubiT> OR <https://go.usa.gov/xubjm>

Risk culture is a key indicator of how widely a contractor's risk management process has been adopted. The most common approach for doing this is to record threats and opportunities, and mitigation strategies in a project risk register. Next, confirm the appropriate approvals of the risk response action(s) taken by the project. This should involve changes in scope to the control account and/or summary control account that impact baseline budget/resource and/or schedule levels. The interviewee should be able to articulate the relationship between the risk management process and the EVMS, and their specific role and responsibilities therein. This demonstration should be made using current project documentation affirming that the interviewee's actions are timely, appropriate, and traceable.

For more information on the culture categories, factors, and checkpoints please reference the documented study results at <https://ip2m.engineering.asu.edu/> and the newly updated DOE PM [Compliance Assessment Governance \(CAG\) 2.0](#) document.

Future newsletter articles will address the remaining Environmental Categories of People, Processes, and Resources.

Congratulations to our newly certified FPDs!

Level I

John Catledge (NNSA)

Alvin Morrow (NNSA)

Mary Treska (EERE)

Level II

Alexander Bachowski (SC)

Amy Read (EERE)

Walter Swasdibutra (SC)

Level III

Gerardo Islas Rivera (NE)





PMCDP FY22 Q4 Training Schedule

The training schedule is posted on PM-MAX. Save the direct link to the Project Management Career Development Program PMCDP Training Schedule to your favorites: <https://community.max.gov/x/BgZcQw>

| Course Title | LN Code | Dates | CLPs | Details |
|--|---------|-----------------------------|------|----------------------------------|
| Planning for Safety in Project Management | 001035 | July 12-21, 2022 | 28 | (Tue/Thurs) 1-3pm EST Webinar |
| Federal Budgeting Process in DOE | 001034 | July 18-21, 2022 | 32 | 10:30am-4:30pm EST Webinar Daily |
| Program Management and Portfolio Analysis | 001025 | July 25-29, 2022 | 40 | 10:30am-4:30pm EST Webinar Daily |
| Project Risk Analysis and Management | 001028 | July 25-29, 2022 | 28 | 10:30am-4:30pm EST Webinar Daily |
| Facilitating Conflict Resolution | 001558 | August 1-10, 2022 | 24 | (Mon/Wed) 12-4pm EST Webinar |
| Value Management | 001027 | August 2-5, 2022 | 24 | 10:30am-4:30pm EST Webinar Daily |
| Front-End Planning: Getting to CD-1 | 003176 | August 9-25, 2022 | 20 | (Tue/Thurs) 12-3pm EST Webinar |
| Executive Communications | 001031 | August 23-25, 2022 | 24 | 10:30am-4:30pm EST Webinar Daily |
| Managing Performance-Based Contracts | 001951 | August 30-September 1, 2022 | 24 | 10:30am-4:30pm EST Webinar Daily |
| LEED For New Construction and Existing Buildings | 001936 | September 6-8, 2022 | 20 | 10:30am-4:30pm EST Webinar Daily |
| Advanced Earned Value Management Systems | 002689 | September 12-15, 2022 | 24 | 10:30am-4:30pm EST Webinar Daily |
| Project Management Simulation | 001029 | September 19-23, 2022 | 40 | 10:30am-4:30pm EST Webinar Daily |
| Advanced Risk Management | 001042 | September 26-30, 2022 | 32 | 10:30am-4:30pm EST Webinar Daily |



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Find up-to-date information and resources anytime!

All PMCDP Course Descriptions and Course Materials can be found in the Course Catalog on Save the direct link to your favorites: <https://community.max.gov/x/UAT3Rw>



Or, download the Interactive Curriculum Map: <https://community.max.gov/x/sQd1Qw>

Have a question, found a bug or glitch in a PMCDP online course, or want to provide feedback? Submit your questions through: PMCDPOnlineCourseSupport@hq.doe.gov.

Contact Us!

The Office of Project Management welcomes your comments on the Department's policies related to DOE Order 413.3B. Please report errors, omissions, ambiguities, and contradictions to: PMpolicy@hq.doe.gov. Propose improvements to policies at: <https://hq.ideascale.com>.

If you have technical questions about PARS, such as how to reset your password, please contact the PARS Help Desk at: PARS_Support@Hq.Doe.Gov. And, as always, PARS documentation, Frequently Asked Questions (FAQs) and other helpful information can be found at: <https://pars2oa.doe.gov/support/Shared%20Documents/Forms/AllItems.aspx>.

The current PARS reporting schedule is located on PM-MAX at the following link: <https://community.max.gov/x/m4lly>.

Need information to apply for FPD certification? The Certification and Equivalency Guidelines (CEG) can be found here: <https://community.max.gov/x/lQd1Qw>.

Can't put your finger on a document or information you were told is available on PM-MAX? Looking for information on DOE Project Management? Submit your questions and queries to: PMWebmaster@doe.gov.

To reach the Professional Development Division team:



Linda Ott — Division Director for Professional Development, PMCDP Program Manager, FPD Certifications Manager, PM Newsletter Editor, Linda.Ott@hq.doe.gov, 240-474-7721



Sigmond Ceaser — PMCDP Certification and Equivalency Guidelines Lead, PMCDP Curriculum and Content Manager, PMCDP Delivery Platform Advisor, Sigmond.Ceaser@hq.doe.gov



Ruby Giles — PMCDP Budget Manager, PMCDP Training Coordinator and Training Delivery Manager, Course Audit Program, Ruby.Giles@hq.doe.gov

If you would like to contribute an article to the Newsletter or want to provide feedback, contact the Editor at DL-PM-40.

