



COMPETENCY-BASED LEARNING for Data Professionals

Building sustainability through data capability.



THE CHALLENGE



Most **data professionals** do not have access to a high quality, competency based professional development programs. The energy industry relies heavily on data that is shared and interchanged; the consequence to **data capability and preparedness** can be serious, including:

- Wasted time and effort (up to 30%) as geoscientists, engineers, data scientists and others struggle to find and prepare data for analysis because dissonant and unprepared data sources are not ready to use.
- Slow, inefficient and unverified learning processes for new staff or re-skilling existing staff, causing delays of up to four years for full resource capability or poor resource agility and portability.
- Patchy knowledge verification makes hiring new staff, consultancies or contractors uncertain.
- Variable data management knowledge and practices for the stakeholder base (operators, vendors, regulators, financiers ...) resulting in poor communication, errors in interpretation and critical data loss.
- Inconsistent data practices, resulting in data dissonance and systems that need to be “managed” over and over again.
- Under-used industry best practices, impacting interoperability and data readiness for analysis and interpretation.

A standardized, competency-based, data-centric learning program that culminates in an industry recognized certification (CPDA™) positions employers to avoid confusion, rework, missed opportunities, and loss of revenue.

This program is an investment in your business and your people. Join us in launching this critical initiative.

Recruit
qualified
resources

Realize
talent
potential

Recognize
competence

Reward
performance

Mobilize
Resources

Grow
Investment
Value

COMPETENCY-BASED LEARNING



PPDM Association proposes a joint venture between multiple companies (invite only) to contribute to the development of a **Competency-Based Learning (CBL) Program**. Participation as sponsor and advisor will be limited to not more than 4 companies.

PPDM Intentions

- Improve data literacy for all energy professionals.
- Support data professionals through their careers.
- Enable reskilling or upskilling existing data professionals as they transition to new data or domain disciplines by addressing competency gaps.
- Support preparation for CPDA™ candidates (see page 5 for the competency profile).
- Encourage a strong baseline of professional capability in all stakeholders, including those often underserved by the commercial sector (emerging nations, regulators, National Energy Repository managers, National Energy Companies).

Proposed Scope

- Learning programs for all Competencies (see page 5).
- Target up to Level 6 Proficiency for all competencies (see page 6).
- Leverage multiple Learning Mechanisms (see page 7).
- Learning language will be English.
- Knowledge verification through graded exams and the CPDA™.

Business Model

- Ideally, introductory classes will be offered at no cost to members (and possibly to non-members, contingent on funding).
- Other classes will be offered on a fee basis with the costing structure designed to recover costs, support program maintenance, and enable program growth.

Impact

- Access to consistent learning materials will simplify the early learning needs for data professionals, making onboarding easier for employers and providing a consistent skill set.
- The program will enable reskilling and upskilling to encourage professional development and functional agility in data professionals.
- Improved data literacy among executives, data users and IT staff will support better data practices throughout industry.

THE FRAMEWORK



Competency Framework

The PPDM Competency Framework describes 15 competencies in 3 categories. It is exclusively available to corporate PPDM members.

8 Functional competency families

4 Domain competency families

3 Behavioral competency families



Proficiency Objective

The Competency Framework and PPDM Learning programs are based on proficiency. The next slide shows proficiency expectations.

Aware

Novice

Intermediate

Advanced

Expert



Learning Programs

Learning programs are designed to support the needs of Data Professionals at early and midcareer points.

Data Literacy (Novice level)

CPDA preparation

Specialized Competency Development

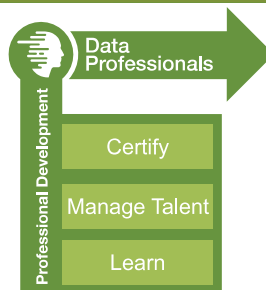


Skill Verification

Skill verification may be based on specific class materials, or collectively as a formal certification.

Less formal: Class exams

More formal: Certification



STANDARD JOB DESCRIPTIONS / PROFICIENCY EXPECTATIONS



Data Analyst
Data Manager
Chief Data Manager



Proficiency Level	Aware		Novice		Intermediate			Advanced		Expert	
	0	1	2	3	4	5	6	7	8	9	10
Functional Competencies											
Data Quality						✓		✓	✓		
Data Governance				✓			✓				✓
Document and Content					✓		✓	✓			
Physical Records			✓	✓		✓					
Data Analysis						✓			✓	✓	
Data Architecture				✓		✓		✓			
Data Security			✓			✓		✓			
Master and Reference Data						✓		✓	✓		
Data Science and Analytics (being discussed by PPDM Committees)											
Domain Competencies											
Geological Information					✓	✓				✓	
Geophysical Information					✓	✓				✓	
Reservoir Engineering					✓	✓				✓	
Spatial Data / Geodesy					✓	✓		✓			
New Energy Competencies (being discussed by PPDM Committees)											
Behavioral Competencies											
Communications					✓			✓			✓
Time Management				✓			✓			✓	
Critical Thinking					✓			✓			✓

Note: this document illustrates 3 of 6 job descriptions. For more see www.PPDM.org

Learning Program Progress



Proficiency Level	Aware		Novice		Intermediate			Advanced		Expert	
	0	1	2	3	4	5	6	7	8	9	10
Functional Competencies	Starting Material in place										
Data Quality	█		█		█						
Data Governance	█		█								
Document and Content	█		█								
Physical Records	█		█								
Data Analysis	█		█		█						
Data Architecture	█		█		█						
Data Security	█										
Master and Reference Data	█		█		█						
Data Science and Analytics	█		█								
Domain Data Competencies											
Geological Information	█		█		█						
Geophysical Information	█		█								
Reservoir Engineering	█										
Spatial Data / Geodesy	█		█								
New Energy Competencies	█										

Note: for more information about PPDM Learning, visit www.PPDM.org

Learning Methods



Classroom



Consistent skills, better retention

Online Learning



Consistent skills, Convenient timing

Mentorship



Leverage experts, gain experience

Work Experience



Practice and reinforce

Assigned research



Build strong learning habits

Study projects



Develop cross company experience



Provisional Budget (estimated)

Material (existing or donated) rework to competence / proficiency	\$300,000
Add new material for online components (Basic, not fancy)	\$300,000
Add new material for classroom components	\$300,000
Legal, oversight, equipment, volunteer management, project management etc.	\$100,000
Provisional Estimate	\$1,000,000

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Timeline

- Program for top priority competency family (set by sponsors) 3-6 months after program launch.
- Contingent on sufficient funding and final scope as set by sponsors, deliver the full program in 15 – 24 months.
- PPDM volunteer subject matter expertise will be leveraged for robust content.

Cost estimate

- Full program cost as scoped now: \$1,000,000 USD
- Sponsor share: \$250,000 - \$300,000 USD each

Note that sponsor donations of learning or other materials may reduce the time needed to develop the program.

Student Commitment (planned)



Level	Classroom (hours)	Online Learning (hours)	Mentorship	Exams	Pre-requisites	Research and Projects
1-2	8	16	Monthly	Quizzes only	none	1 Week
3	20	24	Monthly	Exams by module	TBD	2 Weeks
4-6	80	50	Weekly as needed	Exams by module	TBD	3 Weeks

Assumptions:

1. Each proficiency and competency can be developed on a timeline that works for the student and employer.
2. Employees should spend about 4% of working year on professional development. (4% of 2087 hours = 83 hours).
3. PPDM Programs can be taken in entirety or cafeteria style, based on the needs of each student.
4. Each program component will be concluded with an exam, minimum pass rate set by program. (CPDA™ with Distinction is over 80%)