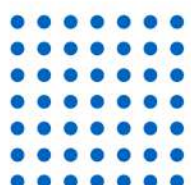


IPEC
PROJECT SYSTEMS



AACE CERTIFIED PLANNING & SCHEDULING PROFESSIONAL (PSP)

**Unlock Your Potential as a Planning &
Scheduling Professional
HRDF-10001306719**

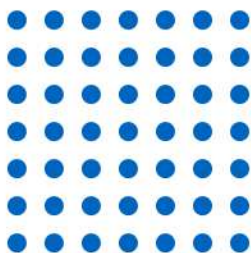


ABOUT IPEC

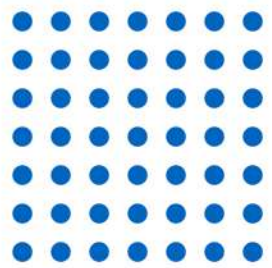


IPEC Project Systems Sdn Bhd focuses in providing solutions that help project-intensive businesses to successfully manage their project, programmes and portfolios. Our core business is Oracle Primavera project portfolio solutions but we also provide customized project management solutions, project accelerators and integration to various enterprise systems.

IPEC Project Systems Sdn Bhd is an AACE International Approved Education Provider (AEP). IPEC Project Systems Sdn Bhd is committed to enhancing the ongoing professional development of AACE members and other cost management professionals through appropriate learning activities and products. As an AACE AEP, IPEC Project Systems Sdn Bhd has agreed to abide by AACE-established operational and educational criteria and is subject to random audits for quality assurance purposes.



TRAINERS PROFILE



ASHUTOSH MAURYA

*Founder of Architect & Developer
Protrain.com*

Ashutosh Maurya has extensive construction project management in India and Middle East. He has been associated with mega multibillion dollars as part of projects core project management team. His total experience spans for more than decade, in this tenure he worked with leading contracting, consultancy and owner organization in India and Middle East.

On the education side Ashutosh Maurya holds Civil Engineering degree from Govt. Engineering College Jabalpur and Master Degree in Construction Management from Indian Institute of Technology (IIT) Delhi. He is certified Project Management

Professional (PMP) from Project Management Institute (PMI) and Certified Cost Professional (CCP), Planning & Scheduling Professional (PSP) and Earned Value Professional (EVM) from Association of Advancement of Cost Engineering (AACE) International.

Ashutosh is a multidisciplinary professional. While he is construction management professional by his education and day job profile, on the other side he proficient IT professional as hobby. Ashutosh is founder, architect and developer of Protrain.com.



ABOUT AACE INTERNATIONAL



AACE International is a 501(c) (3) non-profit professional educational association founded in 1956 and is the largest organization globally serving the entire spectrum of the cost and management profession. Since 1956, AACE International has been the leading-edge professional society for cost estimators, cost engineers; schedulers project managers, and project control specialists. AACE International is the largest organization serving the entire spectrum of cost management professionals. AACE International is industry independent and has members in 80 countries and 80 local sections.

AACE's Certifications have been a mark of distinction for over 30 years. As the industry leader, AACE's certifications provide exam and experience validation that lets employers, clients, and colleagues identify those who meet the program's competency standards. With AACE Certification, you demonstrate that you have met the highest professional standard available in the industry.



WHY CHOOSE PSP CERTIFICATION?

- **Validate Your Skills:** PSP certification gives you a credible means to showcase your proficiency and knowledge, ensuring employers recognize your capabilities in project planning and scheduling.
- **Industry Recognition:** PSP certification is respected worldwide, providing you with a competitive advantage and opening doors to new career opportunities on a global scale.
- **Ensure Project Success:** By earning PSP certification, you demonstrate that you have the expertise to meet project time objectives effectively, enhancing your value as a professional.
- **Comprehensive Competency:** The PSP certification equips you with advanced skills in project planning, integrated scheduling, forecasting, analysis, and effective communication with stakeholders.
- **Employer Trust:** PSP certification provides employers with confidence, as they can easily identify professionals who have met the program's rigorous competency standards.

A CERTIFIED STUDENT IN PSP CERTIFICATION WILL BE PROFESSIONAL EXPERT IN THE FOLLOWING SCOPE OF WORK



- Assisting with the development and implementation of acceptable planning and scheduling techniques and methods.
- Preparing procedures and guidelines for project planning and related scheduling management and control.
- Supporting the project team efforts toward the development of the project plan and translating that project plan into the project schedule.
- Leading development and analysis of project schedules, CPM software implementation time impact and delay analysis and review of periodic schedule updates.
- Monitoring and updating accurate schedule progress toward achieving the desired project completion date and informing the project management team of changes to schedule outcome.
- Prepare and provide schedule progress reports, trending charts, and schedule analysis. Maintain records of scope changes, trends, and variances that potentially affect schedule performance.
- Assuring the credibility of the information contained in the schedule.
- Assisting with the preparation of project time and cost claims.
- At the completion of the project, assists in developing and recording the project's historical schedule information and "lessons learned", for use on future enterprise projects.
- Maintains a high level of technical expertise through continuing education programs and participation in cost/schedule related professional activities.
- Provides technical training and guidance to project personnel on planning and scheduling subjects.
- Develops leadership/team-building skills as well as written and verbal communication skills.
- Advance their professionalism by participating in and advancing professional organizations dedicated to professional planning and scheduling.



DAY 1 -PROJECT PLANNING

- Reviewing the scope of work, client requirements, division of responsibility, project objectives and constraints to develop the strategy for effective project delivery.
- Identifying major activities to be performed and the preferred sequence in which they are to be accomplished.
- Developing an integrated plan to effectively execute the scope of work and meet project objectives by identifying cost/schedule areas for the further definition of the scope of works.
- Coordinating with project management.

Five step process of project planning

What?	The physical feature and technical objectives (scope)
How?	Work breakdown structure (WBS)
Who?	Resource commitments and organization breakdown structure (or OBS)
When?	Timeline initially and then the schedule later in the planning process
How Much?	Budget estimate

- Define the project scope
- Establish the work breakdown structure (WBS)
- Identify resources and availability (people and capital assets)
- Establish timeline and sequence of deliverables
- Determine the budget for each component activity, work package, or group of tasks

- **Stakeholders:** Describe how to identify the stakeholders and be able to discuss the challenges of eliciting the information regarding needs, wants, or expectations from the various stakeholders.
- **Historical data:** Describe the use of historical data in planning.
- Contract/scheduling specification:

a. **Contract types:** Explain the advantage and disadvantages of these types of contracts from the owner and contractor viewpoints:

- 1) fixed price;
- 2) unit price;
- 3) cost-plus (with fixed, incentive, or award fees); and
- 4) time and materials (T&M).

b. **Project delivery methods**

- 1) Design-build;
- 2) EPC (Engineering-Procurement-Construction);
- 3) Design-build-operate;
- 4) variations of the above.

c. **Risk allocation:** Explain how each contract type allocates risks between the contracting parties.

d. **Supply chain:** Explain this concept and how it might affect procurement planning.

Value improvement practices

a. **Constructability**

Constructability is used during construction project planning. It involves methods to optimize the design in consideration of the effective performance of construction activities. Alternate materials, unique construction sequencing (i.e., activity logic), and construction technologies are key considerations. The constructability analysis provides planning input related to the means and methods such as field vs. shop fabrication. The constructability analysis of the detailed baseline schedule output provides an analysis that determines that the project can be constructed within the time constraints of the project.

b. **Manufacturability**

Manufacturability is used during asset planning to optimize product and production system design in consideration of the effective performance of manufacturing and related activities. Alternate materials, manufacturing technologies, and standardization are key considerations (e.g., use common parts for different products).

COURSE CONTENT

DAY 2 -PROJECT SCHEDULING

Scheduling involves two distinct phases: schedule development and schedule management/control.

1. Initiate the schedule development process.

- schedule model and methods; and
- schedule development process and procedures.

2. Obtain input/data for schedule development.

- stakeholders
- contract schedule specifications
- other requirements
- output from project planning is input to schedule development
- schedule scope of work
- project execution approach/methodology
- work breakdown structure (WBS)
- project milestones and key events
- activity definitions
- logical relationships.

3. Develop detailed project schedule.

- quality analysis
- constructability analysis

4. Schedule development output/deliverables.

- baseline schedule
- cash flow
- resource histograms
- basis of schedule is documented

COURSE CONTENT

5. Schedule models and methods: Compare scheduling models and methods:

- **Arrow diagram method (ADM):** Using this method also identify critical points.
- **Precedence diagram method (PDM):** Using this method include at least on each finish-start, finish-finish, start-finish, and start-start relationships with lags and identify critical path(s).
- **Bar chart/Gantt chart:** Explain the difference between this and a logic diagram.
- **PERT chart:** Describe the program evaluation & review technique (PERT) method and use.
- **Line of balance (LOB):** Describe this method and uses.
- **Linear scheduling:** Describe this method and uses.
- **Critical chain:** Describe this method and uses.

6. CPM schedule algorithm:

- Calculate the early and late start and finish times, and identify total float.
- Given either an ADM or PDM network with activity durations, early and late start and finish times, and total float, analyze and correctly answer questions based on activity and schedule calculations showing early/late start or finish times of all activities, and total float of these activities.

7. Milestones and key events.

8. Activities definition.

9. Activity logic and logic diagrams:

- Given a series of logic statements, draw a logic diagram.
- Describe the various PDM logical relationships and their effective use: (e.g. FS, SF, FF, FS).
- Leads and lags: Discuss any proper use of leads and lags.
- Describe the difference between hard logic and soft logic.
- Preferential logic: Describe and define.
- Given a soft-logic work package with no strict activity interrelationships, describe ways to schedule this work.

COURSE CONTENT

10. Activity durations: Describe the process for developing realistic activity durations.

11. Constraints: Discuss typical real and mechanical constraints that may be imposed on a schedule.

12. Project schedule calendars: Discuss the use of multiple project calendars.

13. Activity coding: Describe the use of coding for sorting/selection of activities.

14. Resource allocation, loading and leveling:

- Resource allocation: Describe the mechanics of this step.
- Labor and equipment loading.
- Cost or value loading.
- Resource availability: Discuss ways to assess availability and potential consequences of not making that assessment.
- Resource limits and constraints: Discuss resource limits and constraints that may occur or be imposed.
- Resource levelling or balancing: Describe the process.
- Resource management: Describe how this process is tied closely to cost estimating (e.g., quantification) and schedule development (e.g., resource allocation).

15. Critical path: Describe the critical path (longest path) for the schedule. Determine the constraints and potential impacts to critical path, and near critical path work activities. Assess the impact on critical path and near-critical activities and report critical work activities to the project manager. A critical work activity is defined in several ways:

- An activity that is not meeting the required rate of production such that the project objectives will be met on or ahead of schedule.
- An activity that indicated a required resource allocation that is either unattainable or unmanageable.

16. Schedule quality analysis.

- Schedule specification compliance.
- Schedule integrity: Open ended logic, relationships, constructability (means and methods).
- Validation: Describe how the quality and completeness of plans can be assessed before implementation and why the process is important. Also explain the value of historical, empirical information.

COURSE CONTENT

17. Schedule strategy.


- Describe the characteristics and risks of a fast track schedule.
- Describe alternate schedule strategies in regards to potential changes and claims that a contractor may apply in developing a network schedule (acceleration, crashing, crunching)

18. Project control baseline: Describe how to integrate the cost and schedule control baselines.establishing effective project control interface (e.g., how to measure progress, integrate schedules, etc.) for each type of contract.

19. Schedule hierarchy: Describe the levels of schedule detail and their intended uses.

20. Code of accounts: Describe the characteristics of a good code of account structure and its benefits for both project scheduling and cost control.

21.Schedule of values: Explain this concept in regards to contracts and schedule control for contracted work.

- **Cost or value loaded schedules:** Explain this concept in regards to contracts and schedule control for contracted work.
 - **Front-end loading (FEL):** Describe this concept and its benefits in terms of risk management and project control planning.
- 

COURSE CONTENT

DAY 3 -SCHEDULE MANAGEMENT AND CONTROL

1. Schedule progress and status procedures.

- a. Status schedule: Discuss the various methods and mechanics of statusing and updating a schedule.
- b. Physical progress: Explain the general concept for the following methods, and, given input information, be able to calculate the following:
 - units completed;
 - incremental milestones;
 - weighted or equivalent units completed;
 - resource expenditure and/or resources required;
 - remaining duration;
 - percentage completed; and
 - judgment.

2. Schedule performance assessment:

- a. Schedule variance: Describe this concept as an empirical difference between actual and planned performance for any aspect of the control plan.
- b. Schedule trends: Describe the difference between random and non-random variance and how this might influence subsequent control actions and forecasts.
- c. Schedule control assessment: Describe practices and methods for assessing and reporting performance (variances and trends) against the following baseline plans:
- d. Describe methods to identify variance (e.g., calculate slip, earned value methods, assess critical path and remaining float).

COURSE CONTENT

- e. Describe performance reporting methods (e.g., schedule plot showing the planned and actual schedule activity status), tables showing a percentage or factor that expresses the extent that the schedule is ahead or behind at given points in time, lists of activities sorted by early start date or total float
- f. Resources/earned value: Explain the general concept and the importance of a reliable control basis and objective, quantitative physical progress measures.
 - Labor: Describe basic earned value methods.
 - Material and fabrication: Describe the use of earned value, schedule assessment,
 - Material management reports

3. Forecasting

Forecast and forecasting: Describe how the schedule control concepts are applied in the context of work in progress, performance assessment findings, change management, and corrective actions.

4. Schedule change management:

Project Controls schedule change management refers to the process of managing any change to the scope of work and/or any deviation, performance trend or change to an approved or baseline project control plan.

Asset management, schedule change management refers to the process of managing any change to documented information defining the scope of an asset or the basis of measuring and assessing its performance over its life cycle. Change management helps ensure that requirements always address customer needs.


- Trend or variance analysis: Describe how the schedule control concepts are applied in change management.
- Time impact analysis: Describe the concept related to schedule change.
- Corrective actions: Describe what these are and why they might be needed.
- Change control procedures: Describe ways that change management findings and dispositions are recorded, reported, and incorporated in the project control plans.
- Manage schedule contingency:
 - Describe methods for managing schedule contingency.
 - Describe ways to assess the need for contingency for work in progress

COURSE CONTENT

5. Contract claims and disputes

- Explain the difference between scope and non-scope changes.
- Discuss the concept of changes and change management in respect to contract agreements.
- Describe the difference between changes and claims (for scope, compensation, relief, damages, delay, or other disagreements).
- Describe major reasons for contract changes including the role of project scope definition.
- Describe various types of schedule delay in respect to contract changes and claims (excusable, non-excusable, compensatory, and concurrent).
- Describe the potential effects of disputes on project performance.
- Discuss and understand the elements of cost in context of contract schedule disputes and claims (bonds, retainage, performance guarantees, liquidated damages, demurrage, legal costs)

6. **Project closeout:** Describe the mechanics and challenges of closing out a project in respect to project control systems data and information

- Historical data: Describe the importance of historical, empirical data and databases to future planning and schedule development.
 - Empirical data: Data that are collected using direct or indirect observation. The key feature of this definition is observation. Empirical data consist of pieces of information that are recorded through sensory experience; this kind of data is made up of things that can be seen or heard.
 - Observation can be direct, as in the case of witnessing a phenomenon first-hand, or indirect, as in asking someone about his or her mental state (i.e., beliefs, attitudes, or values).
 - Lessons learned: Describe the importance of accurate data collection and the importance of evaluating the project schedule execution experiences for the benefit of future projects.
- 



Join the Elite:

AACE's PSP certification program sets you apart as a Planning and Scheduling Professional of the highest caliber. By earning this certification, you join a select community of professionals driving project excellence worldwide.

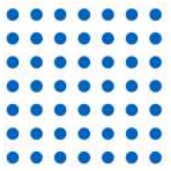
Take the first step towards unlocking your potential as a Planning & Scheduling Professional. Visit our website to learn more about the PSP certification program and how it can propel your career to new heights.

Eligibility Requirements

- 8 years industry related experience or
- 4 years industry related experience + 4-year industry related college degree
- Adherence to AACE's Canons of Ethics

Exam Structure

- 5 hours maximum
- 119 simple, multiple choice and compound, scenario questions
- 3 Domains: Basic Planning & Scheduling Knowledge (56 questions), Practical Exercise 29 questions, and Planning & Scheduling Applications (34 questions)
- 1 Domain: Communication. Comprises of 1 memo writing assignment with a given scenario and instructions for writing a response in an onscreen text box Closed Book
- Any style, battery operated calculator permitted (not provided by the testing center)



WHO SHOULD ATTEND & GET CCP CERTIFIED?



PROJECT PLANNERS

PROJECT SCHEDULERS

**PROJECT CONTROL
PROFESSIONAL**

COST CONTROL ENGINEERS

PROJECT MANAGERS

PROJECT CONTROL MANAGER

PLANNING MANAGER

SCHEDULING MANAGER

PROJECT CONTROL ENGINEERS



*this course & certification is recommended for professionals who are involved in major oil & gas; infrastructure engineering & construction projects.



IPEC
PROJECT SYSTEMS



The **IPEC AACE International Project Planning & Scheduling Course** is an approved certification course by HRD Corp under certification category. For employers registered with HRD Corp, the course fees as well as the exam certification fee are fully claimable. However, it's important to note that the exam certification fee is only claimable for the first attempt. In the case of subsequent attempts, the employers will be responsible for paying the fee directly to AACE International.

To facilitate the process, IPEC will assist in coordinating the payment of the first attempt exam fees. Once the payment has been made by HRD Corp, IPEC will ensure that the exam fees are promptly transferred to AACE International. This arrangement allows HRD Corp registered employers to take advantage of the claimable benefits for both the course fees and the first attempt exam certification fee. Subsequent attempts will require direct payment from the employers to AACE International.

CONTACT US



+60 3-7956 5688 / 6688



www.ipecsystems.com.my



sales@ipecsystems.com.my



Unit 28.2, 28th Floor,
Menara 1 Mont Kiara Office Suites,
Kompleks 1, No. 1, Jalan Kiara, 50480,
Wilayah Persekutuan,
Kuala Lumpur, Malaysia