Project Risk Management Single Subject Certificate Syllabus Levels 1&2

The Single Subject Certificates in Project Risk Management (Risk SSC) are designed to build on the knowledge gained in the APM Project Management Qualification or equivalent knowledge based foundation examinations in project management.

The Level 1 Certificate is designed to determine an individual's knowledge of project risk management, sufficient to allow an individual to contribute to the formal process of project risk management.

The Level 2 Certificate is designed to determine an individual's knowledge and understanding as well as capability in project risk management, sufficient to allow an individual to undertake formal project risk management. It assumes the knowledge stated in the level 1 syllabus.

The syllabus defines the topics that a candidate taking the Project Risk Management Single Subject Certificate examinations is expected to be knowledgeable of (Level 1) and have capability in (Level 2).

The syllabus is largely derived from APM's *Project Risk Analysis and Management (PRAM) Guide 2nd edition*. It assumes that candidates taking the examinations already have the level of project risk management knowledge specified in the APM Project Management Qualification syllabus.

Candidates for the examination are expected to have read or be familiar with the following:

- *APM's PRAM Guide 2nd Edition*

Suggested reading list:

- OGC - Office of Government commerce (2007) ***For successful risk management: think M_o_R*** The Stationery Office ISBN: 978-0-113-31064-7
- Chapman, C., and Ward, S. (2003) ***Project Risk Management: Processes, Techniques and Insights, 2nd Edition:*** John Wiley and Sons Ltd, UK ISBN: 978-0-470-85355-9
- Hillson, D.A., and Murray-Webster, R. (2007) ***Understanding and Managing Risk Attitude 2nd Edition*** Gower Publications Ltd, UK ISBN: 978-0-566-08798-1
- Hillson, D.A., and Simon, P. (2007) ***Practical Project Risk Management - The ATOM methodology*** Management Concepts inc., USA ISBN: 978-1-56726-202-5

Risk SSC Level 1 Syllabus

Chapter ref.	Title	Topic coverage	Learning outcomes
1	General	• Definitions • Background to project risk management	a) Define project risk management b) Define project risk c) Define risk event
2	Benefits	• Hard benefits of project risk management • Soft benefits of project risk management • Threats to effective risk management	a) List benefits of risk management b) List possible threats to effective risk management
3	Principles	• Risk as threat and opportunity	a) Define threat and opportunity
4	Process	• Different phases of the PRAM process	a) Define the PRAM process
4.1	Initiate	• Identification of project objectives, scope, stakeholders and success criteria	a) Define project objectives b) Define scope c) Define success criteria d) Define stakeholder and stakeholder analysis
4.2	Identify	• Identification of risks – see 8.1	
4.3	Assess	• Assess risks qualitatively and quantitatively • See 8.2 and 8.3	
4.4	Plan responses	• Selection of appropriate risk response strategies dependent on importance of the risk event and cost benefit of the response • See 8.4	
5	Organisation and control	• The risk management plan • Responsibilities of different roles in the risk management process: a. Sponsor b. Project manager c. Risk process manager d. Risk manager e. Risk owner f. Action owner • Control of the process - risk management plan, risk register, risk analysis, risk status reports, risk reviews,	a) Define the risk management plan b) Define roles and responsibilities of those involved in the risk management process c) Define the contents of a risk register d) Define the contents of a risk report e) Define risk reviews f) Define project contingency / management reserve

		lessons learnt • Project contingency or management reserve	
6	Behaviour	• Risk attitude of individuals • The risk attitude spectrum a. Risk-averse b. Risk-tolerant c. Risk-neutral d. Risk-seeking • Biasing influences on individual risk attitude – the triple strand: a. Situational factors including: i. Levels of relevant skills ii. Perception of probability or frequency iii. Perception of impact magnitude iv. Degree of perceived control (manageability) v. Closeness of the risk (proximity) vi. Potential for direct consequences (propinquity) b. Subconscious factors via heuristics including: i. The availability heuristic ii. The representative heuristic iii. The anchoring and adjustment heuristic iv. The confirmation trap v. The affect heuristic c. Affective factors – feelings and emotions • Biasing influences on group risk attitude including: a. Groupthink b. The “Moses factor” (or “follow the leader”) c. Risky and cautious shift d. Cultural conformity including the influence of national cultural differences	a) Define risk attitude b) Define risk-averse c) Define risk-tolerant d) Define risk-neutral e) Define risk-seeking f) Define the triple strand g) Define situational factors h) Define the availability heuristic i) Define the representativeness heuristic j) Define the anchoring and adjustment heuristic k) Define the confirmation trap l) Define the affect heuristic m) Define emotion n) Define groupthink o) Define the “Moses factor” p) Define risky and cautious shift q) Define cultural conformity r) Define power distance s) Define uncertainty avoidance

7	Application	• Introducing risk management into an organisation • Getting buy-in to risk management	a) List the main steps of introduction of risk management to an organisation
8.1	Risk identification techniques	• Uses of different risk identification techniques such as: a. Assumptions analysis b. Constraints analysis c. Checklists d. Prompt lists e. Brainstorming f. Interviews g. SWOT analysis h. Delphi technique	a) Define risk identification techniques
8.2	Qualitative risk assessment	• Uses of different qualitative risk assessment techniques • Prioritisation of risks based on probability, impact and proximity	a) Define: i. Probability / impact assessment ii. Structured risk descriptions, i.e. cause – risk - effect iii. Risk breakdown structures
8.3	Quantitative risk assessment	• Uses of different quantitative risk assessment techniques: a. Probability distribution functions b. Monte Carlo analysis c. Correlation d. Pre- and post-mitigation assessment e. Decision trees f. Sensitivity analysis g. Expected value	a) Define quantitative risk assessment techniques
8.4	Risk response	• Uses of different techniques for responding to risks, such as: a. For threats: i. Avoid ii. Fallback iii. Reduce iv. Share v. Accept a. For opportunities:	a) Define risk response techniques

		i. Exploit ii. Enhance iii. Share iv. Accept	

Risk SSC Level 2 Syllabus

Chapter ref.	Title	Topic coverage	Learning Outcomes
1	Introduction	• Not included. Covered in level 1.	
2	Benefits	• Hard benefits of project risk management • Soft benefits of project risk management • Threats to effective risk management	a) Explain benefits of risk management and how they apply at different levels within an organisation b) Explain possible threats to effective risk management
3	Principles	• Risk as threat and opportunity • Project risk and risk events	a) Explain the concept of risk as threat and opportunity b) Explain the differences between risk events and project risk
4	Process	• Different phases of the PRAM process • Scale the application of project risk management to the size, complexity and stage of the project	a) Demonstrate understanding of the PRAM process and apply it to a case study b) Demonstrate application of scaling project risk management to a case study
4.1	Initiate	• Identification of project objectives, scope, stakeholders and success criteria	a) Identify project objectives, scope and success criteria b) Carry out stakeholder analysis
4.2	Identify	• Identification of risks	a) Identify risks from a case study, in the form cause - risk event - effect
4.3	Assess	• Assess risks qualitatively and quantitatively • Use of appropriate probability distributions • Prioritisation of project risks	a) Explain the difference between qualitative and quantitative risk assessment and when they should be applied b) Assess risks qualitatively c) Assess risks quantitatively d) Explain the need to prioritise project risks
4.4	Plan Responses	• Selection of appropriate risk response strategies dependent on importance of the risk event and cost benefit effectiveness of the response. For clarity, cost benefit analysis means the total cost of applying a response (including direct cost and the	a) Suggest assignment of risk owners based on a case study b) Plan response strategies for differing threats and opportunities identified from a case study c) Calculate cost/benefit analysis of risk responses

		expected value of any secondary risk) against the benefit of the expected reduction in the expected value of the risk • Selection of risk owners	
5	Organisation and control	• The risk management plan • Responsibilities of different roles in the risk management process • Control of the process - risk management plan, risk register, risk analysis, risk status reports, risk reviews, lessons learnt • Project contingency or management reserve • The importance of continued risk ownership and regular risk reviews	a) Produce a risk management plan b) Explain, and distinguish between, the differing roles in project risk management c) Create a risk register d) Explain the importance of continued risk ownership and regular risk reviews e) Explain methods for determining levels of contingency on projects f) Explain the importance of post-project reviews, lessons learnt, and how to obtain information for future risk management.
6	Behaviour	• Human factors in risk management • Potential biasing effect of the triple strand of influences on risk attitude (and therefore judgement in risky situations)	a) Explain how human factors (individual and group risk attitudes) could generically have an effect on the stages of the PRAM process and the effectiveness of risk management. b) Explain how situational assessments, heuristics, feelings/emotions and/or group biases can have an effect on the risk management process and how they can be overcome. Apply to a case study.
7	Application of PRAM	• Introducing risk management into an organisation • Getting and maintaining buy-in to risk management	a) Describe ways to introduce risk management to a project, including getting buy-in from senior management
8.1	Risk identification techniques	• Uses and benefits of different risk identification techniques	a) Explain the different identification techniques, their advantages and disadvantages b) Use the appropriate risk identification technique for the situation.
8.2	Qualitative risk assessment	• Uses and benefits of different qualitative risk assessment techniques	a) Define project specific probability and impact scales b) Use a 5x5 probability/impact grid to

		• Risk breakdown structures	prioritise risks
8.3	Quantitative risk assessment	• Uses and benefits of different quantitative risk assessment techniques: a. Monte Carlo b. Decision trees c. Sensitivity analysis d. Expected value • Use of probability distributions specific to Monte Carlo: a. Triangular b. Uniform c. Beta d. Discrete • Correlation, criticality index, cruciality • Statistical terms: a. Mean b. Median c. Mode d. Variance • Net present value and internal rate of return	a) Explain Probability distribution functions and demonstrate their use b) Explain the uses and benefits of risk assessment techniques c) Explain the theory behind Monte Carlo Analysis and its application on projects d) Interpret data from a Monte Carlo analysis e) Calculate mean, median, mode, variance f) Explain criticality and cruciality g) Explain net present value (NPV) and internal rate of return (IRR) in risk assessment h) Use a decision tree to decide the best option i) Use sensitivity analysis to determine key risk drivers j) Calculate expected value of threats
8.4	Risk Response	• Uses of different techniques for responding to risks	a. Suggest the most appropriate responses for a variety of threats and opportunities