	Letter Grade Assignments				
	For Technical Team Report and Presentation (60%)				
Performance Areas:	**A (70-100%)**	**B (60-70%)**	**C (50-60%)**	**D (40-50%)**	**E (30-40%)**
Geoscience (6.5%) CO1, PO4	Innovative evaluation of the geological data in terms of the petroleum play components, discussion of depositional environments, geological statistics, STOIIP, including structural analysis and multiple correlations of the reservoir, with stratigraphic layering. Creation of an integrated conceptual reservoir model. Analysis of uncertainties. Excellent diagrams and appropriate use of analogues	Comprehensive evaluation of the geological data in terms of petroleum plays components, with reasonable conclusions reached on depositional environment and STOIIP based on the data. Re-drawn structural interpretation, and stratigraphic correlations of the reservoir layering, analysis of uncertainties and use of analogues.	Reasonable attempt at analysis of the geological data for reservoir, either incomplete or containing internal inconsistencies. Some attempt at correlation, reservoir subdivision. STOIIP calculated, uncertainties mentioned.	Poor attempt to analyse geological data, with wrong and/or inconsistent conclusions, perhaps based on literature sources or 'analogue' fields. Poor attempt to correlate reservoir, no understanding of geology illustrated.	Bare summary of available geological data, with no attempt at analysis or relying entirely on 'analogue field' description. Wrong and/or inconsistent conclusions.
Formation Evaluation (6.5%) CO1, PO5	Excellent evaluation of petrophysical data (log data and core data), appropriate summaries of reserve volumes, statistics and distributions for M/C and modelling, showing linkage between geological and engineering models (including consideration of geostatistical techniques – lorenz plots, variograms etc.). Flow zones and units correlated, and the variability in the petrophysical properties assessed. Good clear log interpretations, cut-offs, summary parameters, histograms - all figures relevant to discussion. Analysis of uncertainties.	Comprehensive evaluation of petrophysical data (log data and core data), appropriate summary statistics and distributions for M/C, showing linkage between geological and engineering models (incl. reasonable attempt at utilising geostatistical techniques). Summary reserve volumes – deterministic and probabilistic. Flow zones and units correlated. Good clear log interpretations, cut-off values, summary parameters, histograms - all figures relevant to discussion. Uncertainties analysed with minor discrepancies.	Reasonable analysis of petrophysical data (log data and core data), appropriate summary statistics and distributions for M/C, acceptable linkage between geological and engineering models. Summary of reserve volumes – deterministic and probabilistic. Flow zones and unites identified. Acceptable clear log interpretations, summary parameters, histograms - all figures relevant to discussion. Uncertainty in the data identified but not addressed clearly.	Poor analysis of petrophysical data (log data and core data), acceptable summary statistics and distributions for M/C, poor linkage between geological and engineering models. Reserves stated but no uncertainty or sensitivity analysis. Acceptable but limited log interpretations, summary parameters, NTG cut-offs, histograms - many figures not relevant to discussion. Uncertainty in the data is largely ignored.	Minimal analysis of petrophysical data (log data and core data), no summary statistics and distributions for M/C, no linkage between geological model and engineering models. Reserves stated. Bare/wrong log interpretations, summary parameters, NTG cut-offs, histograms - few figures relevant to discussion. No uncertainty analysis.
Reservoir Engineering and Simulation (11%) CO1, PO4	Excellent evaluation of all relevant data (SCAL, RFT, WT, and PVT). Excellent consistency between interpretation of data and prediction/simulation model. Innovative and critical analysis. Multiple production scenarios analysed. Thorough investigation of uncertainties.	Very good evaluation of all relevant data (SCAL, RFT, WT, and PVT). Good consistency between interpretation of data and prediction/simulation model. Few production scenarios analysed. Good investigation of uncertainties.	Good analysis of all relevant data (SCAL, RFT, WT, and PVT). Reasonable consistency between interpretation of data and prediction model. Only one or two production scenario analyses. Awareness of uncertainties	Poor analysis of all relevant data (SCAL, RFT, WT, and PVT). Some inconsistency between interpretation of data and prediction model. Single production scenario with no proper analysis. Lack of awareness of uncertainties.	Little analysis of all relevant data (SCAL, RFT, WT, and PVT). Inconsistency between interpretation of data and prediction model. No production scenario with analysis lacking. Lack of awareness of uncertainties.

Drilling Engineering (6.25%) CO1, PO3	Excellent selection on drilling rig and realistic drilling schedule. Excellent use of geological and pore pressure prognosis in the design of the drilling program. In particular the selection of mud weights and design of casing (including casing schematic) and cementing scheme to ensure that well control and long term well integrity is maintained. Comprehensive description on well trajectory and the tools used to achieve the plan. Comprehensive and thorough risk analysis	Good selection on drilling rig and reasonable drilling schedule. Comprehensive use of geological and pore pressure prognosis in the design of the drilling program. In particular the selection of mud weights and design of casing and cementing scheme to ensure that well control and long term well integrity is maintained. Good description of well trajectory and the tools used to achieve the plan. Reasonable risk analysis.	Acceptable selection on drilling rig and reasonable drilling schedule. Acceptable use of geological and pore pressure prognosis in the design of the drilling program. In particular the selection of mud weights and design of casing and cementing scheme to ensure that well control and long term well integrity is maintained. Acceptable description of well trajectory and the tools used to achieve the plan. Reasonable risk analysis.	Poor selection on drilling rig and unrealistic drilling schedule. Little use of Geological and pore pressure prognosis in the design of the drilling program. In particular the selection of mudweights and design of casing and cementing scheme to ensure that well control and long term well integrity is maintained. Poor description of well trajectory and limited or poor selection of the tools used to achieve the plan. Limited or poor risk analysis.	Very poor selection on drilling rig and unrealistic drilling schedule. Minimal use of Geological and pore pressure prognosis in the design of the drilling program. In particular the selection of mudweights and design of casing and cementing scheme to ensure that well control and long term well integrity is maintained. Limited and/or poor description of well trajectory and the tools used to achieve the plan. Very Poor risk analysis.
Production Technology (6.5%) CO1, PO3	Excellent evaluation and design of the field development concept, bottomhole completions, reservoir and tubing performance, artificial lift, perforation, formation damage, stimulation and sand management. Excellent diagrams have been used to explain all the above. All the above technical aspects are considered in detail, have been justified by the actual field data and proven by calculation wherever possible.	Comprehensive evaluation and design of the field development concept, bottomhole completions, reservoir and tubing performance, artificial lift, perforation, formation damage, stimulation and sand management. Clear diagrams have been used to explain all the above. All the above technical aspects are considered adequately, have been justified by the actual field data and proven by calculation wherever possible.	Reasonable analysis and design of the field development concept, bottomhole completions, reservoir and tubing performance, artificial lift, perforation, formation damage, stimulation and sand management. Diagrams not always clear and/or appropriate. Some technical aspects are considered in adequate detail and justified by the actual field data and proven by calculation wherever possible.	Poor analysis and design of the field development concept, bottomhole completions, reservoir and tubing performance, artificial lift, perforation, formation damage, stimulation and sand management. Diagrams missing, not always clear and/or appropriate. Few technical aspects are considered in adequate detail and justified by the actual field data and proven by calculation wherever possible.	Inferior analysis and design of the field development concept, bottomhole completions, reservoir and tubing performance, artificial lift, perforation, formation damage, stimulation and sand management. Diagrams missing, not clear and/or inappropriate. Limited technical aspects considered in detail and justified based on the actual field data. Limited use of possible calculations.

Commercial Analysis (6.5%) CO4, PO12	Excellent economic evaluation with good Cash Flow Analysis/Model that shows NPV, IRR and comparisons with other cases. Discount Factors were well justified with respect to acquisition cost of capital, opportunity cost of capital and risks. Tax models shown clearly with effect of government influence. Risks were well managed with the use of complex risk management tools such as Decision Tree models, Bayesian Theorem etc. Current Government Policies and Interests in the Oil and Gas sector are well highlighted	Good economic evaluation with good Cash Flow Analysis/Model that shows NPV, IRR. Discount Factors were justified with respect to at least one of these: acquisition cost of capital, opportunity cost of capital or risks. Tax models shown clearly with effect of government influence. Risks were well managed with the use of simple risk management methods such as payback period, payoff matrix or discount rate adjustment. Aware of the current Government Policies which can influence the Cash Flow Model.	Reasonable economic analysis with good Cash Flow Analysis/Model that shows NPV, IRR. Good choice of discount factor but with limited justification. Tax models shown with effect of government influence. Risks were managed with the use of simple risk management methods such as payback period, payoff matrix or discount rate adjustment but with minor errors.	Poor economic analysis with poor cash flow model with wrong information on breakeven points, IRR and NPV values. No different cases with different IRR, and discount factors. Poor choice of discount factors with little or no justification of discount factor selection criteria. Government factors are not taken into consideration. No evidence of risk management.	Little to no economic analysis. Very little or no evidence of cash flow analysis, no discount factors and no interest rates. Very poor tax model that shows poor understanding of the economic concepts.
Reservoir and Well Management / Monitoring (2.5%) CO2, PO12	Propose excellent reservoir management and monitoring strategy describing the data gathering and analysis used to resolve existing uncertainties and understand dynamic performance during development drilling and subsequent production phases, the strategy is linked to the principles and objectives that have been set when making field management decisions and conducting field operations.	Propose good reservoir management and monitoring strategy describing the data gathering and analysis used to define existing uncertainties and appreciate dynamic performance during development drilling and subsequent production phases, the principles and objectives that have been set when making field management decisions should be addressed in the strategy	Propose reasonable reservoir management and monitoring strategy describing the data gathering and analysis used to define existing uncertainties during development drilling and subsequent production phases, the principles and objectives that have been set when making field management decisions are highlighted in the strategy	Limited reservoir management and monitoring strategy describing the data gathering and/or analysis used to define existing uncertainties during development drilling and subsequent production phases, the principles and objectives that have been set when making field management decisions are poorly linked to the strategy	Bare reservoir management and monitoring strategy describing the data gathering and/or analysis used to define existing uncertainties during development drilling and subsequent production phases, the principles and objectives that have been set when making field management decisions are not related to the strategy

Environmental Impact and Abatement, and Decommissiong (3.5%) CO2, PO7	Excellent summary of location, development plan and environmental sensitivities, including all mitigation measures. Clear environmental statement. Excellent linkage of development plan alternatives to environmental impacts, and incorporation of environmental concerns in development plan parameters. Innovative analysis of environmental sensitivities, evaluation of environmental and H&S risk. Mitigation measures developed in accordance with relevant regulations, excellent consideration of sustainability issues. Decommissioning plans included in development, in accordance with regulations, and balancing cost, environment and practicality. Clear, concise and logical presentation of environmental aspects and mitigation measures.	Comprehensive summary of location, development plan and environmental sensitivities, including all mitigation measures. Reasonable environmental statement. Sound linkage of development plan alternatives to environmental impacts. Reasonable analysis of environmental sensitivities, evaluation of environmental and H&S risk. Mitigation measures developed in accordance with relevant regulations, good consideration of sustainability issues. Decommissioning plans included in development, in accordance with regulations, and balancing cost, environment and practicality. Good, concise presentation of environmental aspects and mitigation measures.	Reasonable summary of location, development plan and environmental sensitivities, including some mitigation measures. Acceptable environmental statement. Attempt to link development plan alternatives to environmental impacts. Reasonable analysis of environmental sensitivities, evaluation of environmental and H&S risk. A reasonable number of mitigation measures developed in accordance with relevant regulations, some consideration of sustainability issues. Appropriate decommissioning plans discussed in development. Acceptable presentation of environmental aspects and mitigation measures.	Limited summary of location, development plan and environmental sensitivities, including some mitigation measures. Limited environmental statement. Poor to no attempt to link development plan alternatives to environmental impacts. Poor analysis of environmental sensitivities, evaluation of environmental and H&S risk. A limited number of mitigation measures developed, with or without reference to relevant regulations. Poor recognition of decommissioning plans as part of development. Poorly organised presentation of environmental aspects and mitigation measures.	Bare summary of location, development plan and environmental sensitivities. Inferior environmental statement. No attempt to link development plan alternatives to environmental impacts. Bare analysis of environmental sensitivities, evaluation of environmental and H&S risk. A limited number of mitigation measures developed, without reference to relevant regulations. Bare to no recognition of decommissioning plans as part of development. Badly organised and unclear presentation of environmental aspects, without mitigation measures.
Technical Report Integration, structure, quality, Plagiarism (5%) CO3, PO11	Report sections are clearly consistent, with results from one section used in subsequent sections, innovative problem solving and discussion of relationships and dependencies between sub-topics. Report is clear with no repetition between sections, publishable standard, all material is referenced, includes executive summary.	Report sections are largely consistent, results are transferred from sub-topics with only minor discrepancies, and comprehensive handling of relationship between sub-topics. Report is well laid out, using figures, references, and summary. Text is clearly understood and readable.	Report sections sometimes correspond and are sometimes contradictory, with acceptable acknowledgement of dependencies and inter-relationship of sub-topics. Acceptable layout of report, possibly poor choice or figures, poor grammar or language use, style changes, repetitiveness.	Poor correlation or consistency between report sub-topics, with contradictory results in some sections, and little to no discussion of issues encountered. Poor layout of report, marginal figures, captions. References inadequate. Poor or inconsistent use of English, grammar and formatting.	No consistency in results or discussion between different sub-topics of the report. Little or no acknowledgement of the inter-relationship of sub-topics. Report very sloppy, no attention to figures and captions, no referencing, no attention to grammar, English or formatting. No effort shown.
Oral Presentation (5%) C03, P09,	Very clear, lucid presentation. Slides well-organised, clear text, good colour scheme. Within time limit (+/- 1 minutes). Team member handovers handled well.	Good presentation, well organised with clear slides, handovers were ordered. Within time-limit (+/- 2 minutes)	Adequate organisation of slides, acceptable images and text size and clarity, poor timing (+/- 5 minutes) or team organisation.	Poor organisation and timing of presentation, incoherent/difficult to follow, images and text sizes poor, team organisation poor (+/- > 5 minutes)	No organisation, poor timing. Images and text unreadable, team organisation lacking.
Ability to answer questions (1%) CO3, PO9	Questions answered by all team members clearly and concisely, students admit when answers not known.	Good handling of questions, with some team members not answering or some questions not answered.	Adequate answers, with some avoidance or wrong answers or domination of answering by one team member.	Limited answers to questions, showing poor understanding. Some team members not answering.	Students fail to answer questions, either with silence or with poor answers.

	Letter Grade Assignments				
	For Individual Marks and Poster (Total 40%)				
Performance Areas:	**A (70-100%)**	**B (60-70%)**	**C (50-60%)**	**D (40-50%)**	**E (30-40%)**
Individual Marks (30%) *CO3, PO10*		Quality of technical content of individual tasks in the project and therefore individual sections of the report and log book submissions			
Poster Presentation (10%) *CO3, PO9*	**Layout and design**: excellent graphical illustrations, neat and presentable (uncluttered), consistent formatting, visually appealing **Technical Competency**: Demonstrates knowledge gained from the topic, able to answer correctly to questions related to the presented facts, theories and processes. Discussion of relationships and dependencies between components **Content Accuracy**: Items are related to the project, key issues highlighted, use of precise and correct terminology **Presentation Mechanics**: Linguistically correct (no spelling or grammatical errors), adhere to the format specified, no repetition, all material referenced, conference standard poster.	**Layout and design**: Good graphical illustrations, neat and presentable but busy in places, consistent formatting, good colour scheme **Technical Competency**: Demonstrates knowledge gained from the topic with minor discrepancy/mistakes in answering questions related to presented facts, theories and processes. Discussion of relationships and dependencies. **Content Accuracy**: Items are related to the project, key issues highlighted, use of correct terminology. Minor repetition **Presentation Mechanics**: Linguistically correct (minor spelling or grammatical errors), adhere to the format, materials are referenced	**Layout and design:** acceptable graphical illustrations and colour scheme, acceptable formatting (poor use of space e.g. cluttered or empty space). **Technical Competency**: Adequate knowledge gained from the topic, but with contradictions. Adequate answering of questions related to presented facts, theories and processes. Acknowledges relationships between topics, but no discussion **Content Accuracy:** Items are related to the project, key issues highlighted, use of correct terminology. Minor repetition **Presentation Mechanics:** poor grammar or language use, style changes, repetitiveness. Adhere to the format specified. Not all material referenced	**Layout and design:** Poor graphical illustrations and colour scheme, poor formatting (poor use of space e.g. cluttered or empty space). **Technical Competency**: Poor grasp of knowledge gained from the topic, with contradictory results. Poor handling of questions related to presented facts, theories and processes – showing poor understanding. No mention of relationships between topics. **Content Accuracy:** Items are poorly related to the project, key issues not mentioned, incorrect or failure to use appropriate terminology. **Presentation Mechanics:** poor grammar or language use, style changes, repetitiveness. Poor adherence to format. Material not referenced	**Layout and design:** Poor graphical illustrations and colour scheme, poor formatting (poor use of space e.g. cluttered or empty space). **Technical Competency**: Little to no grasp of knowledge grain from the topic, no acknowledgement of the relationships. Fails to answer questions. **Content Accuracy:** Items have no or little relation to the project, key issues not mentioned, incorrect or failure to use appropriate terminology. **Presentation Mechanics** no attention to grammar, English or formatting. No effort shown. No references.