**MARK SHEET – Managing operations research**

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| **Centre Number :** |  | **Centre Name :** |  |
| **Learner Registration No :** |  | **Learner Name:** |  |
| **INSTRUCTIONS FOR ASSESSMENT AND USE OF MARK SHEET** Assessment must be conducted with reference to the assessment criteria (AC). In order to pass the unit, every AC must be met.Assessors will normally award marks for every AC and then total them into a percentage. However, for greater simplicity, there is the option to not use marks at all and merely indicate with a ‘Pass’ or ‘Referral’ in the box (below right). In order to pass the unit every AC must receive a ‘Pass’ **Where marks are awarded according to the degree to which the learner’s evidence in the submission meets each AC, every AC must be met, i.e. receive at least half marks (e.g. min 10/20). Any AC awarded less than the minimum produces an automatic referral for the submission (regardless of the overall mark achieved).** Sufficiency descriptors are provided as guidance. If 20 marks are available for an AC and the evidence in the submission approximates to the ‘pass’ descriptor, that indicates it should attract 10 marks out of 20, if a ‘good pass’ then ca. 15 out of 20. The descriptors are not comprehensive, and cannot be, as there are many ways in which a submission can exceed or fall short of the requirements. | 1. **Learner named above confirms authenticity of submission.**
2. **ILM uses learners’ submissions – on an anonymous basis – for assessment standardisation.  By submitting, I agree that ILM may use this script on condition that all information which may identify me is removed.**

**However, if you are unwilling to allow ILM use your script, please refuse by ticking the box: □** |
| **Learning Outcome / Section 1:** Be able to conduct operations research in an organisation  |
| **Assessment Criteria (AC)** | **Sufficiency Descriptors***[Typical standard that , if replicated across the whole submission, would produce a referral, borderline pass or good pass result]* | **Assessor feedback on AC** *[comments not necessary in every box]* |
| AC 1.1Define a problem in own area of responsibility, that has arisen out of a need to make better use of available resources | **Referral [*ca. 3/12*]** | **Pass [*6/12*]** | **Good Pass [*ca. 9/12*]** |  |
| * A problem in own area of responsibility is not defined, or the problem definition is vague, unclear or inappropriate, or the problem has not arisen out of a need to make better use of available resources
 | * A problem is defined in own area of responsibility that has arisen out of a need to make better use of available resources, although the problem definition may not be clearly or accurately quantified
 | * A problem in own area of responsibility that has arisen out of a need to make better use of available resources is clearly defined and fully quantified
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| / 12(min. of 6) | Pass or Referral |
| AC 1.2Establish the objectives for the problem resolution and any specific requirements that must be met in proposing a solution | **Referral [*ca. 3/12*]** | **Pass [*6/12*]** | **Good Pass [*ca. 9/12*]** |  |
| * No objectives for the problem resolution are established, or objectives are vague, unclear or inappropriate, or objectives are not focused on a need to make better use of available resources in proposing a solution
* No specific requirements that must be met in proposing a solution are established, or specific requirements are vague, unclear or inappropriate
 | * Limited but sufficient objectives for the problem resolution are established and quantified to devise an appropriate measure of performance that must be met in proposing a solution
* Any specific requirements that must be met in proposing a solution are established, although how the requirements will be met by the operations research methodology is imprecise
 | * Objectives for the problem resolution are established and quantified or expressed in rigorous mathematical terms to devise an appropriate measure of performance that must be met in proposing a solution
* Specific requirements that must be met in proposing a solution are established and clearly and fully addressed by the operations research methodology
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| / 12(min. of 6) | Pass or Referral |
| AC 1.3Select and justify a specific operations research methodology to resolve the problem, identifying both its strengths and weaknesses in comparison to alternative methodologies | **Referral [*ca. 3/12*]** | **Pass [*6/12*]** | **Good Pass [*ca. 9/12*]** |  |
| * No specific operations research methodology to resolve the problem is selected and justified, or the selected operations research methodology is vague or unclear, or is incorrect, or is inappropriate for the problem resolution
* A specific operations research methodology to resolve the problem has merely been selected with no justification for the particular choice in comparison to alternative methodologies and/or there is no identification of its strengths and weaknesses in comparison to alternative methodologies
 | * A specific and appropriate operations research methodology to resolve the problem is selected and justified in comparison to alternative methodologies and its strengths and weaknesses in comparison to alternative methodologies are identified, although the range of alternative methodologies compared may be limited
 | * A specific and appropriate operations research methodology to resolve the problem is selected and justified in comparison to a wide range of alternative methodologies and its strengths and weaknesses in comparison to a wide range of alternative methodologies are identified
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| / 12(min. of 6) | Pass or Referral |
| AC 1.4Collect, validate and analyse data collected from the organisation in order to employ the selected operations research methodology to propose an appropriate solution | **Referral [*ca. 11/44*]** | **Pass [*22/44*]** | **Good Pass [*ca. 33/44*]** |  |
| * No data has been collected, or data collection is limited and insufficient in relation to the scale of the problem, or the relevance and validity of the data is not clear
* No operations research methodology has been employed to propose an appropriate solution, or:
* the operations research methodology is inappropriate or has been employed incorrectly
* there are errors in the data analysis and use of the operations research methodology that nullify the proposed solution
* the proposed solution does not meet both the objectives for the problem resolution and any specific requirements for the problem resolution
 | * Limited but sufficient data has been collected in relation to the scale of the problem, although the relevance and validity of the data is not always made clear
* An appropriate operations research methodology has been employed correctly to propose an appropriate solution and there is some confidence that the proposed solution can be justified by the data analysis and the methodology, although the methodology does not always take full account of all controlled variables and relevant uncontrolled variables
* The proposed solution meets both the objectives for the problem resolution and any specific requirements for the problem resolution
 | * Comprehensive data has been collected in relation to the scale of the problem, and the relevance and validity of the data is always made clear
* An appropriate operations research methodology takes full account of all controlled variables and relevant uncontrolled variables, the methodology has been employed correctly to propose an appropriate solution, and there is a high level of confidence that the proposed solution can be justified by the data analysis and the methodology
* The proposed solution meets both the objectives for the problem resolution and any specific requirements for the problem resolution
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| / 44(min. of 22) | Pass or Referral |
| **Section comments** (optional): | **Verification comments** (optional): |
| **Learning Outcome / Section 2:** Be able to interpret the outcomes of operations research  |
| **Assessment Criteria (AC)** | **Sufficiency Descriptors***[Typical standard that , if replicated across the whole submission, would produce a referral, borderline pass or good pass result]* | **Assessor feedback on AC** *[comments not necessary in every box]* |
| AC 2.1Recommend improvements to organisational efficiency based on the outcomes of operations research | **Referral [*ca. 5/20*]** | **Pass [*10/20*]** | **Good Pass [*ca. 15/20*** |  |
| * No improvements to organisational efficiency are recommended, or:
* improvements are not based on the outcomes of operations research
* the outcomes of operations research are interpreted incorrectly,
* the improvements recommended do not address both the objectives for the problem resolution and any specific requirements that must be met
 | * The outcomes of operations research are interpreted correctly to recommend improvements to organisational efficiency that address both the objectives for the problem resolution and any specific requirements that must be met, although limited consideration has been given to the wider organisational implications of any efficiency improvements
 | * The outcomes of operations research are interpreted correctly to recommend improvements to organisational efficiency that address both the objectives for the problem resolution ***and*** any specific requirements that must be met, and consideration has been given to the wider organisational implications of any efficiency improvements
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| / 20(min. of 10) | Pass or Referral |
| **Section comments** (optional): | **Verification comments** (optional): |
|  | **/ 100** | **TOTAL MARKS** |
| **Assessor’s Decision** | **Quality Assurance Use** |
| **Outcome** (*delete as applicable*): **PASS / REFERRAL** | **Signature of Assessor:****Date of QA Check:** | **Outcome** (*delete as applicable*): **PASS / REFERRAL** | **Signature of QA:****Date of QA check:** |