# TMA 01 Project Proposal and Initial Progress

## 1 Introduction

You must contact your tutor as soon as possible after the start of the module. You must also start work on your project as soon as possible – well in advance of the submission date for this TMA.

The first task is identifying a project topic. Section 4 of the _Project Choice_ document, 'Identifying a topic', gives guidance on this, as does the Project preparation forum, which you should already have been using. You will also find it helpful to look through the Sample Project Titles and Project Ideas. You will be considering in detail any legal, social, ethical and professional issues relating to your choice in TMA 02, but at this point you should consider whether these are likely to be serious enough to mean your project choice is inappropriate. For example, proposing to develop an app to print guns using a 3D printer would be inappropriate! Legal Social Ethical Professional issues will help you evaluate your choices.

If you have any doubts over this ask your tutor's advice. As soon as you think you have an initial, feasible idea you should consult your tutor before doing anything else. If you cannot think of an idea, still contact your tutor as he or she will help you think through the issues and identify some possible ways forward. When you and your tutor are happy that you have a well-developed idea that it is clearly feasible, then you can begin work towards completing this TMA.

The project choice document divides TM470 projects into three main categories: research, development and evaluation projects. You should identify which category your project is in. It is possible your project may span more than one category but we suggest you mainly concentrate on just one as this will result in a more comprehensive and in-depth output. Your choice of category/categories will affect the _project work_ you need to do. In particular it will affect the output and the tasks and subtasks you need to complete in order to produce this:

- A **research project** will usually include addressing a research question or considering a research problem and exploring possible approaches to solving this described in other people's published work. The output will probably be a research report which includes comprehensively justified recommendations for a solution and an evaluation and justification of its likely effectiveness and the project work will include an extensive review and analysis of academic and/or technical literature.

- For a **development project**, depending upon what you are creating, the output may include software, hardware or designs and the project work designing, implementing in some way and testing.

- For an **evaluation project** the output will probably include an evaluation report including recommendations, and the project work include a range of analysis, evaluation, and perhaps design, activities.

So when we refer to 'project work' in TM470, the details of this will vary in their nature according to the category of project.

You may have noticed in the Study Guide that LO11 includes the phrase 'You should be able to develop and demonstrate the ability to analyse a practical problem and devise and _implement_ a solution'. TM470 interprets the word 'implement' in quite a broad way, so it encompasses research reports, software, a complete specification or design and so on. So, the word 'implement' does not restrict project choice to only development projects.

Your work will have three main elements:

- preparing for and planning your project;

- the project work;

- reviewing and reflecting upon your planning and preparation, and project work.

The remainder of this document is divided into four sections: a summary of the project activities you will be reporting on in TMA 01; a summary of what you need to submit for TMA 01; guidance on completing TMA 01; and the indicative mark scheme.

**Four notes of caution**

The marking of this TMA will assume that you have been working at the required study rate of about 10 hours per week since you started the module. You should be spending about 75% of your time on your project work, and about 25% of your time writing TMA 01.

TM470 is designed to help you learn *how to* carry out an academic project as well as providing you with the opportunity to actually *do* an academic project. As this is probably the first time you have done an academic project it is possible your early TMAs' marks may be lower than for previous modules. This is quite common and is not necessarily indicative of the overall module result. A difficult start can still lead to an excellent result (and the reverse, an excellent start may not be sustained and lead to a low grade unless the high standard of work continues throughout the project).

As soon as you have submitted TMA 01 you should read TMA 02, so you have this in mind as you continue with your project. Continue to work on your project while you are waiting for the feedback on this TMA from your tutor, or it will be difficult to keep to your project plan. Stay in touch with your tutor on a regular basis between TMA 01 and TMA 02, letting him or her know what progress you have made and asking questions as necessary.

Throughout your project you should make regular backups, perhaps to a cloud service or an external hard drive. This is your responsibility and the University cannot make allowances for loss of data resulting from hardware failure.

**Submitting your TMA**

This module uses the electronic TMA (eTMA) system for submission of TMAs. To submit your TMA, please go to your StudentHome page and follow the link provided.

The eTMA system limits file sizes to 5 MB for this TMA.

If you foresee any difficulty with submitting your assignment on time then you should contact your tutor well in advance of the cut-off date.

For further information about policy, procedure and general submission of assignments please refer to the Assessment Handbook, which can also be accessed via your StudentHome page.

# 2 Project activities

When you submit TMA 01 you will be expected to have made progress on the following project activities, which are derived from the module learning outcomes.

a.  Identifying the goals and content of your project.

b.  Starting to select and evaluate relevant information sources that describe related work and point to possible methods to be used.

c.  Identifying resources (especially data, access to people, etc.) that are crucial for success and assured yourself that these will be available when needed.

d.  Identifying and evaluating your own skills and knowledge that are crucial for the success of this project. Identifying essential skills that you lack and starting to develop them.

e.  Choosing an appropriate project lifecycle model and starting to plan and schedule the work required based upon this.

f.  Undertaking some exploratory work to begin the project work.

g.  Reflect on progress to date.

You should maintain a project journal as you complete these activities, containing a record of what you have done and why, what you have read, problems you have encountered and how you overcame them, and so on. This will make writing your TMAs and EMA much easier to do.

Before starting these activities you should study the guidance in Section 3 and the indicative marking scheme in Section 4 – the latter outlines some of the expectations of your tutor so bear these in mind as you do the work.

As you complete these activities, refer to the various documents on the TM470 website, linked from Resource Map: Resources for TMA 01 as these are designed to assist you.

# 3 What to submit for TMA 01

We suggest you organise your TMA under three main headings:

- Preparation and planning
- Project work
- Review and reflection.

Whilst you need to include all the elements in Tables 3.1, 3.2 and 3.3, you should not see it as a rigid template for your TMA 01. Rather, identify the structure which best enables you to express your work in a coherent narrative that is easy to follow. However, you should make sure that the elements in Tables 3.1, 3.2 and 3.3 are easily identifiable and assessable.

We think that you should be able to provide what is needed in **around 3000 words plus perhaps one or two short appendices**. Please use landscape format where it improves readability for the marker – this can be a problem for some screen shots and program code listings.

The length of each section will vary according to the nature and subject of your project. Your tutor can advise on the balance. But remember that your TMA will be marked against the learning outcomes, so if you omit one of these or only treat it in a cursory manner, you will limit the marks you can be awarded. Also, L07 emphasises clarity of communication, so poorly structured and/or over-long TMAs are likely to do less well.

The relationship between the various project activities you carry out and the learning outcomes is not always straightforward but we have indicated the most important learning outcome for each. But when your tutor marks your TMA other learning outcomes may be relevant as well. For example (these are not the only examples):

- **L07**. *Communicate information, ideas, problems and solutions clearly* is relevant to all activities.
- **L08**. *Learn independently and reflect on what has been done, with a view to improving skills and knowledge* is relevant to your write up of most of the activities as we are expecting you to explain and justify your decisions throughout.

Your TMA will be assessed **as a whole** so you must ensure it is internally consistent. For example, the schedule for a project following an iterative lifecycle model will be different to one following a waterfall lifecycle model. Similarly your schedule should contain the tasks and subtasks you have identified.

You should write in a grammatically correct, professional manner, avoiding slang or colloquialisms, recognising that your tutor is broadly knowledgeable in Computing and IT, but may not be familiar with the specifics of your particular project.

Before you start work on your TMA it is **extremely** important that you study in detail both the guidance in Sections 3.1, 3.2 and 3.3 and the indicative marking scheme in Section 4 – the latter outlines some of the expectations of the marker. Much of what you write in this TMA will form the basis of sections in your final project report (the EMA), so investment at this stage will save work later on.

## 3.1 Preparation and planning

**Table 3.1**

| Preparation and planning | Learning outcome |
| --- | --- |
| The working title of your project. Description of the problem you will address, indicating its scope. | **LO2**. Identify and refine the goals and content of your project. |
| Outline of the major tasks and subtasks within the project at an appropriate level of detail to enable your tutor to assess the viability of your project. | **LO2**. Identify and refine the goals and content of your project. |
| Choice and justification of a lifecycle model for its management. Within the context of the chosen lifecycle model, a schedule for completing the tasks and subtasks. | **LO9**. Plan and organise your project work appropriately, and keep systematic records of plans, progress and outcomes. |
| An outline of the resources and skills needed and the methods you are considering using, taking into account the risks and how these will be minimised. | **LO3**. Identify, list and justify the resources, skills and activities needed to carry out the project successfully. Identify and address any associated risks. |

Make sure the elements in Table 3.1 are easily identifiable and assessable even if you use a different template.

When you are ready to write this section of the TMA you will almost certainly find (and indeed, we recommend) that you have iterated through each of the tasks several times, developing drafts that have been maintained throughout the time you have been working. With each iteration you are likely to have refined some or all of the following:

- the title and the description
- the tasks and subtasks
- the resources needed (in terms of searching for and reading possible sources)
- your ongoing estimate of how much can be achieved in the limited time available
- your thinking about availability of resources (especially access to people and data) and dependence of the project on securing them in a timely way

## Working title

The title should be short and clear. Adopt a style similar to that used by published research papers you have found. In many cases, it will be possible to develop a title that refers directly to the main output of your project.

## Description and scope

There are many ways to describe your project. One useful one is to give short, one- or two-sentence answers to each of the following questions:

- What is the problem that needs to be solved or understood?
- Why is it considered a problem?
- What will be the benefits of solving it?
- What are the key ICT aspects of this problem?
- What is your existing knowledge of this problem?
- What might the solution look like?
- What, specifically, will you deliver by way of a project output?

You may need to adapt some of these to suit the nature of your topic, but you should have a clear and simple answer to the last question. None of the answers should come as a complete surprise to your tutor, who should have been briefed concisely and clearly by you well in advance of the TMA.

Be realistic about how much you can achieve in the project: most projects take longer to complete than is initially estimated (ask any builder!). Here are some useful questions to help you scope your project:

- What am I going to deliver as a project output?
- How will I produce it: through iteration, incrementation, both of these, or through some other strategy (indicate which)?
- How will I evaluate it?

Aim to provide informative, but concise answers to each of them.

## Major tasks and subtasks

Project management is concerned with both what work you need to do and how you are going to do it. The first task is to identify the major tasks and subtasks that, taken together, will deliver the final project. You should be able to describe these at a level of detail that enables your tutor to establish their feasibility.

## Lifecycle model and schedule

There is a guide to different project lifecycle models on the TM470 project website called Choosing a Lifecycle Model. You should consider the different models as ways to help organise your project. If you are finding it hard to identify a clear set of subtasks, the lifecycle models for projects that are hard to define clearly in advance may be of particular help.

By the time you draft this TMA, you should be able to state and justify which lifecycle model you intend to adopt, giving clear reasons for choosing one over the others. There are project lifecycle models other than those documented that you may prefer, or you may wish to modify those provided to suit your needs. For example, in development projects it is likely you will concentrate on a subset of the activities in the lifecycle model, as doing the whole thing would be too ambitious.

Weigh the relative strengths and weaknesses of the main alternatives in light of the distinctive features of your chosen topic. We suggest you consider using a table to present your evaluation of the different models.

There is a guide to project management on the TM470 website called *Planning and Organising a Project* which should help you create a schedule for your project.

For each of the tasks and subtasks you need to make a realistic assessment of how long it will take and how likely it is to be successful. The time taken will often be longer than you initially imagine – perhaps twice as long! In the early stages of your planning and scheduling you will need to revise your project work to increase its focus and reduce its scope.

The elements of your project plan that pose the biggest risk to success are often those that are not under your control – for example, the cooperation of other people at your workplace. If you feel uncomfortable about either the length of time required or the likelihood of success, you should revise the scope of the project, prioritising tasks and identifying those elements that will be addressed only if time permits.

When you produce your schedule, calculate what time you will have in hours available for your project each week, and include holidays and any other scheduled activities that are likely to take time away from your project. Also, include time to write your TMAs and EMA. When you produce your schedule we suggest you work backwards from the EMA submission deadline (which cannot be moved) including some slack to cater for the unexpected such as minor sicknesses, in order to ensure you finish on time. You are likely to need to revise your schedule for subsequent TMAs; this is not especially desirable but very common. You may use a format of your choosing for the schedule, as long as it is clear and can be inserted as text or a table in your TMA document.

Your schedule should include both the immediate tasks and future tasks through to the project end. For many projects, it will be possible to specify future activities in detail. For others, it will only be possible to be definitive about the immediate steps to be taken, perhaps over the next month or so, and activities further into the future will be much more vague or uncertain. Your tutor will make an assessment of whether your overall approach is justified in relation to the nature of your project.

Your schedule should be consistent with the project lifecycle you have chosen, so if an iterative lifecycle has been selected, your tutor will expect to see iterations in your schedule.

## Resources, skills and methods

The list of resources should focus on those that are distinctive to your project; there is no need to include reference to readily available resources such as the OU Library, your own computer, etc. Rather, you are likely to include any specialist equipment or software, collections of data, access to people who are stakeholders or 'users'. For each resource, you should say why it is needed and indicate how you intend to ensure you can acquire it in a timely way with an emphasis on the risks involved and how you will minimise these.

Where appropriate, we would like you to gather data from real users, but we appreciate that this is not always possible. If you really can't find a genuine user then consider a surrogate. This might be a colleague, friend or family member who can take on the role of the user and form their own ideas so you can discuss requirements with them.

If you plan to undertake some practical work, you should indicate the method or methods that you intend to use. For example, you might specify the software design approaches you are thinking of adopting, the programming languages you will evaluate, the data recording and analysis techniques you expect to use, etc. You should always justify your choices and, where you have considered alternatives describe their relative strengths and weaknesses.

You should make a *realistic* assessment of your own skills, matching them to those identified as needed for your project, and assess your ability to develop, extend or acquire any new skills. Identify any risks associated with these skills and consider how you would minimise them. Be careful not to over-estimate your time and/or capabilities – learning a new programming language or complex computer system as part of a project is often unrealistic and very risky.

# 3.2 Project work completed

**Table 3.2**

| Project work | Learning outcome |
| --- | --- |
| Document any sources of information you have selected and read. | **LO4**. Gather, analyse and evaluate relevant information to complete the project successfully. |
| Describe any exploratory work you have completed that begins the work at the heart of the project. | **LO2**. Identify and refine the goals and content of your project. |

Make sure the elements in Table 3.2 are easily identifiable and assessable even if you use a different template.

## Information sources – the literature

At this stage of the project you should have selected a modest number of information sources that you believe will be useful to the project. These may include academic or technical articles from journals, conferences or professional magazines, chapters from books, authoritative web sources, selected sections of one or two textbooks, developer forums, and so on. Collectively we refer to these as the **literature**. You should list the sources you have selected and write a

sentence or two about how you have selected them, why you think they are trustworthy and how you think they will contribute to your work. By all means mention material that you have read and discounted, but do so very briefly. The Library website contains help on how to format references.

You may reference your level 3 module materials but this is not sufficient as we are expecting you to go beyond these.

You should be able to summarise any one item and its relevance in a single paragraph, or two at most. _Reviewing Literature_ has some suggestions on how to write about relevant literature.

In later assignments we expect you to show how ideas from these sources have informed your own work. Eventually they should become an essential part of the narrative of your EMA.

## Project work

At this stage we are expecting very modest beginnings to your work. Much of it may well be exploratory, sketchy and tentative, but it is very important to have begun to do some of the work that will contribute to what it is you aim to deliver. The nature of this work will depend very much on the category of your project and your chosen topic.

- For a research project you may have identified the key concepts, and attempted to present an overview of the topic in your own words.

- For a development project you may have begun to elicit and list requirements for a piece of software and, at the same time, sketched the rough outline of an appropriate diagram, such as an ER diagram, or an important part of the user interface, or attempted to write a piece of code that you expect to prove challenging.

- For an evaluation project you may have designed an observation plan for evaluating one or more user interfaces or designed a questionnaire that you intend to circulate to stakeholders.

These are only examples, but hopefully they will help you understand the kind of project work that is anticipated. We think it is important to tackle a small part of the problem at the heart of the project. You could view the time spent on this as a pilot to gauge the feasibility of the overall idea. Some students find it useful to try this for more than one topic to see which holds most promise.

Don't spend time polishing this early work: you aren't being assessed on its absolute correctness or comprehensiveness. As long as your writing is fairly legible, you can even consider scanning hand-written sketches rather than invest hours in producing perfectly formatted diagrams and documentation that are likely to change anyway.

Your tutor needs to see evidence that you have spent time understanding what your project will involve, so that he or she can give you constructive feedback. This evidence is likely to be in both the main body of the report and appendices, with key information in the main body and supplementary material in appendices. Providing evidence of your project work is a theme that follows through in all the TMAs and the EMA. The EMA will be second marked by an examiner who knows nothing about you and will only see what is in your EMA, so he or she will draw their conclusions entirely from your description and the evidence you provide of the work you have done.

# 3.3 Review and reflection

**Table 3.3**

| Review and reflection | Learning outcome |
|---|---|
| Review progress of project work outlining what you have done, identifying any obstacles or problems that have emerged and explaining either how you addressed these or propose to address these in the near future.<br><br>Explain how you have been developing the skills necessary for your project, if you do not already have them. | **LO8**. Learn independently and reflect on what has been done, with a view to improving skills and knowledge. |

| Indicate to your tutor any issues on which you would like specific feedback. | *This will help your tutor to understand what you need help with, and how you plan to maintain contact.* |
|---|---|
| Briefly summarise how your tutor has influenced your thinking in terms of your project choice and how you have agreed to maintain contact with your tutor. | |
| References | |
| Appendices | |

Make sure the elements in Table 3.3 are easily identifiable and assessable even if you use a different template.

Review and reflect upon all aspects of the progress you have made on your project based upon your project journal. In particular describe any problems you have already encountered, how likely they are to recur (e.g. unlikely, quite likely, virtually unavoidable) and what impact they may have (e.g. slight, potentially significant, fundamental). You should then say what you plan to do to minimise the likely impact of each of the most significant risks. You should mainly focus on *project risks* rather than those relating to your personal or working life (e.g. my dog ate TMA 01!).

Explain how you have been developing the skills necessary for your project, if you do not already have them.

Indicate to your tutor any specific issues on which you would like feedback and/or guidance. Finally, indicate how you have taken into account your tutor's comments on your project choice and how you have agreed to maintain contact with your tutor.

### Some tips:

- Consider using a table to summarise the resources, skills, methods and risks.
- A brief summary of your project work should suffice, with any key outputs of your work in an appendix.

# 4 Indicative marking scheme

Please read this mark scheme carefully as your TMA mark will be based upon it.

Your tutor will use a grade-related marking scheme based on Table 4.1. You should check against this table as you carry out your project work for TMA 01, and as you complete the TMA. This will act as a form of self-assessment to help ensure you are working at the appropriate level. The learning outcomes are equally weighted, so they are all important.

A full statement of each learning outcome is given in the Study Guide.

**Table 4.1 Indicative marking scheme**

| | Grade | | | | |
|---|---|---|---|---|---|
| **Learning outcome** | **1** | **2** | **3** | **4** | **5** |
| | **(17–20)** | **(14–16)** | **(11–13)** | **(10–8)** | **(0–7)** |
| | **Distinction** | | | | **Fail** |

| | | | | | |
|---|---|---|---|---|---|
| **LO2**. Identify and refine the goals and content of your project. | Clear title and description of the project. The nature of the problem is well defined. The boundaries of the project and the solution that will be delivered are clear. The proposal is realistic and achievable. | As for Grade 1 but the description is less clear and boundaries of the project and the solution to be delivered may be less well defined. | As for Grade 2 but the description tends towards the general and the scope of the problem may be unrealistically large or too narrow, to the extent that the delivered solution is unlikely to adequately address the problem. | The scope of the problem is unclear and it is not evident that the proposed work will address the problem adequately. | The project is very unclear and little progress has been made beyond identifying the topic area. A score of 0% indicates there has been no engagement or progress at all, beyond choosing a topic. |
| **LO3**. Identify, list and justify the resources, skills and activities needed to carry out the project successfully. Identify and address any associated risks. | Has identified key resources, the timely availability of which are essential to success. Has identified key skills and activities necessary for success. Has judged the risk (likelihood and impact) associated with both resources, skills and activities appropriately and has proposed appropriate measures to manage these risks. | Has missed at most a couple of less important resources, skills and activities and associated risks. | Has missed an important and obvious resource, skill and activity and associated risk or has underestimated the significance of one or more important risks and is thus proposing inadequate measures to manage them. | Considers only generic project resources, skills and activities and associated risks and offers 'routine' solutions that reflect a 'tick-box' approach to risk management. | Has not developed an adequate list of key resources, skills and activities needed plus an associated assessment of risk and how to manage them. |

| | | | | | |
|---|---|---|---|---|---|
| **LO4**. Gather, analyse and evaluate relevant information to complete the project successfully. | Has found and selected relevant and authoritative sources of information. An effective and succinct account of what has been found, clearly identifying how these relate to the work to be done. | The quality and/or relevance of the sources of information may be more diverse. How they relate to the project may be less clear. | As for Grade 2 but the quality, authority or relevance of the sources of information is uncertain, perhaps because of an over-reliance on search engines rather than libraries and academic publishers. | Very few sources have been identified or sources of information may be lacking relevance and/or authority. They may be out of date and may bear only general relevance to the project. Sources mainly based on OU modules. | Sources of information are very general and, although in the same area as the project, it is not clear that they can contribute at all to the work to be done. |
| **LO7**. Communicate information, ideas, problems and solutions clearly. | Clear, concise, structured communication using diagrams or other illustrations where appropriate. Opinions and judgements are always supported by relevant argument or evidence as appropriate. Written in a professional manner for an audience broadly knowledgeable in Computing and IT. Engaged in constructive and insightful project choice discussion with tutor. | Clear, concise, structured communication, using diagrams or other illustrations as appropriate. Opinions and judgements are sound, but are not always fully justified. Broadly successful in writing for audience. Contacted tutor in a timely manner with clearly expressed project idea(s). | Accessible communication style, perhaps lacking in structure. Perhaps misjudging audience by explaining common and familiar concepts. Contacted tutor with project idea(s) that required clarification by tutor. | Ineffective communication, inclusion of irrelevant material. The most important opinions and judgements are supported with some reasons, though these may not be entirely convincing. Perhaps requires a second reading to glean what is being said. Contacted tutor with project idea(s) that required considerable clarification by tutor. | Style obscures what is being conveyed, difficult to comprehend, little or rambling structure. Features opinion and anecdote rather than informed opinion and evidence. Requires a third reading or more. Did not contact tutor before submitting TMA or did contact tutor but with very few, if any, ideas. |

| LO8. Learn independently and reflect on what has been done, with a view to improving skills and knowledge. | Has undertaken useful exploratory work that addresses an important aspect of the problem on which the eventual solution depends heavily and which increases confidence that the anticipated deliverable will be achieved. Insightful review and reflection. Is implementing a strategy for developing the skills needed to complete project. | Exploratory work addresses a valuable but more routine aspect of the project. Good review and reflection. Has started exploring one or more of the necessary skills. | Work has been inappropriately ambitious for this stage of the project. A variety of work including skills development has been initiated but some strands have been abandoned when further progress could have been readily made. Reflection is of limited value but is related to some aspect of the project. | Some exploratory work undertaken but it has focused on issues that are very peripheral to the successful outcome of the project. Reflection is limited and not well related to the project or not well focused on skills and risks. | Little or no work undertaken. Much or all of it may have very little relevance to the eventual solution/deliverable. A mark of 0% means no exploratory work has been undertaken. Reflection is missing or of little relevance. |
|---|---|---|---|---|---|
| LO9. Plan and organise your project work appropriately, and keep systematic records of plans, progress and outcomes. | Has selected an appropriate lifecycle for the project having considered all the alternatives in light of the characteristics of their specific project. Has given an appropriate schedule of future work that reflects their lifecycle and the characteristics of their chosen project. | Has chosen a plausible and appropriate approach or lifecycle model but may not have fully explained why they have dismissed leading alternatives. Schedule is realistic and reflects lifecycle. | Has chosen an adequate lifecycle model, though it may not be the most appropriate given the characteristics of the project. Has given less consideration than deserved to alternatives. Schedule has main elements but is underdeveloped or implausibly detailed. May not reflect lifecycle. | As for Grade 3 but there is only formulaic evaluation of alternatives based on 'rote learning' that doesn't relate to the chosen project. A formulaic schedule that doesn't effectively reflect the character of the project or the lifecycle. May just show a task list. | Has chosen an entirely inappropriate lifecycle model (or none at all). It may be too rigid for an uncertain and ill-defined problem domain or it may be inappropriately open-ended given a well-specified and well-understood project domain. Very undeveloped or highly implausible schedule. Does not reflect lifecycle. |

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