



Research Methods in Science in Engineering

Time Management & Planning

Slide 1

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Elements of Time Management

- Organization
- Prioritization
- Goal Setting
- Planning
- Stress Management
- Learning To Do Good Enough



 EMPossible

Slide 2

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Organization

- Organize your thoughts: keep lists, a journal, lab notebook, etc.
- Organize your research materials: clean desk, organized supplies, organized papers, etc.
- Organize your results & data: use proper data management.
- Organize your tasks: calendar, to-do list, etc.
- Organize your time: time for e-mail, time for reading, time for research, time for play and relaxation, etc.

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Prioritization

You cannot do everything you want to do.

List your to-do's in order of priority.

Draw a line through your tasks where it is reasonable to get everything done that is above the line.

Be at peace with not getting to the other tasks.



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Setting SMART Goals

Specific

What will be accomplished? What actions will you take?

Measurable

How will you measure quality and completeness of goal?

Achievable

Is the goal realistic and feasible to accomplish?

Relevant

Is the goal important to the overall mission?

Time-Bound

What date/time should the goal be completed?

Poor Vs. Good SMART Tasks

Read the literature.

Read and summarize five journal articles.

Work on device.

Finish CAD design of device.

Look for circuit parts.

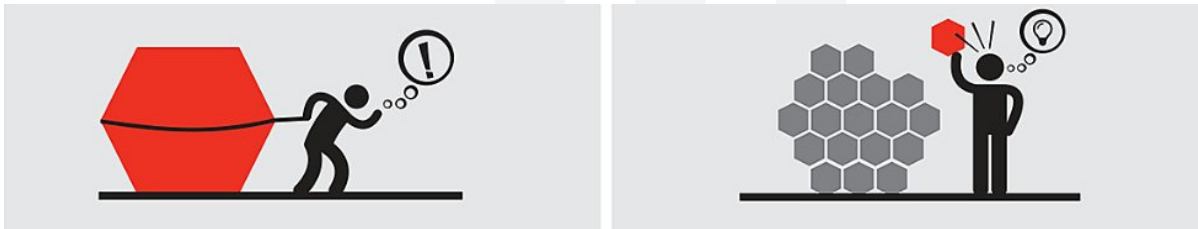
Purchase all parts for circuit.

Test device.

Measure series resistance of device.

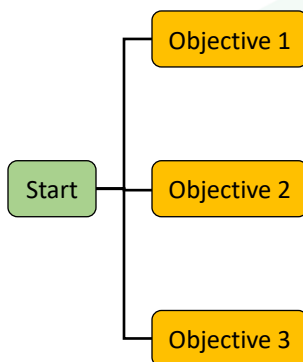
Planning

Always break large and difficult problems into a series of smaller and simpler problems.



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Breaking Down Research



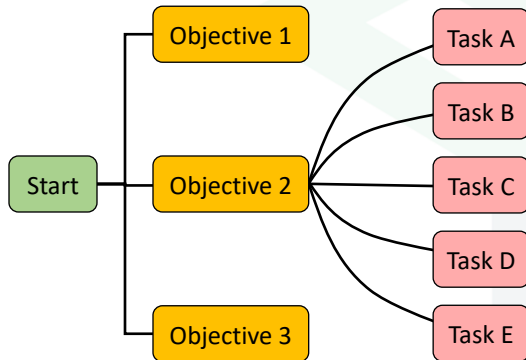
At the highest level, the research has objectives.

Objectives are not tasks.

Objects do not rely on each other.

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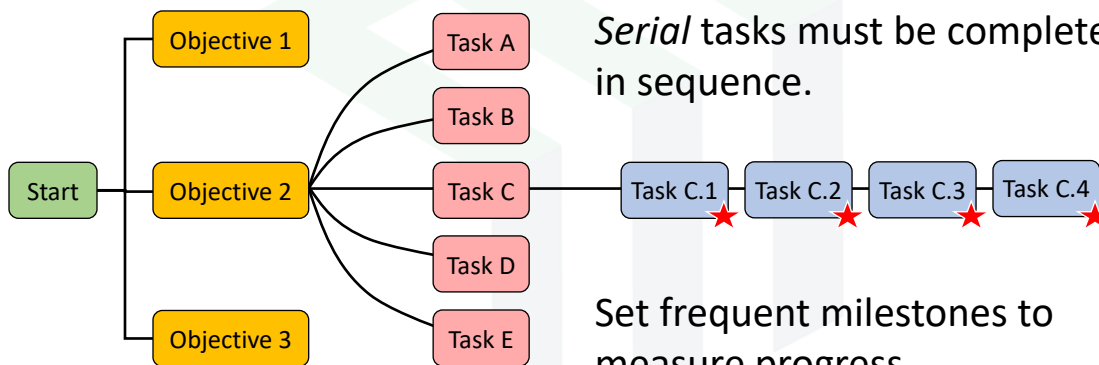
Breaking Down Research



Parallel tasks do not depend on the other tasks to be completed.

While it is still best to complete parallel tasks one-at-a-time, consider changing to another task when stuck or bored.

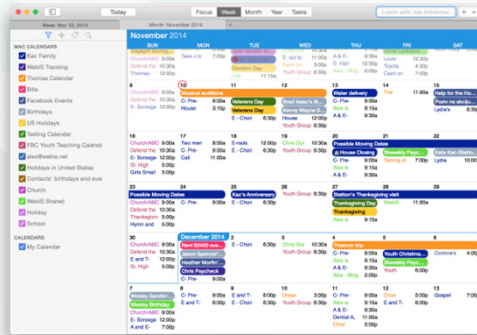
Breaking Down Research



Serial tasks must be completed in sequence.

Set frequent milestones to measure progress.

Maintain a To-Do List & Calendar



This is especially important if you are the scatterbrained type.

Overarching Rule

Work as hard as you possibly can
such that you are still having fun
and leading a healthy lifestyle.

Stress Management

Everybody feels stress.

Minimize stress by proper planning and staying organized.

If you want to work 40 hours per week, plan 20 hours per week.

Get away from your research regularly (sports, walks, movies, relaxation techniques, etc.)



Learn To Do Good Enough

Everybody can do a better job given more time and resources.

You do not have more time and resources.

Do the best you can with the time and resources you have.

Let go of the emotion associated with knowing you could do better.



Maintain a To-Do List & Calendar



Maintain a to-do list and calendar.

Review both every morning.

“Meditate” and plan your day.

Get Stuff Done Early

Do not relax first and get your tasks done second.

Life happens.

Get your tasks done first and relax second.

Dealing with a Chaotic/Busy Schedule

Work extremely hard at the beginning to get all projects at least two weeks ahead of schedule.

If you have a project that is not ahead, it will constantly be in a state of emergency and will be a constant priority and time sink. Other projects will suffer.

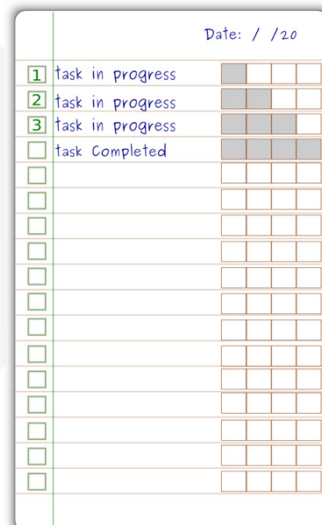
Working ahead will let you react to other emergencies and take advantage of new opportunities. It will allow you to easily shift priority between projects.

It is Possible to Be Too Good at Time Management

If you make yourself productive every second of every day, soon you will need to be productive every second of every day just to survive.

How will you react to emergencies or take advantage of new opportunities?

If you want a 40-hour work week, plan 20 hours of work for the week.



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