

STUDY SKILLS AFTERNOON

Wednesday 5th October, 2.00–3.30pm

2.00	Lectures & Supervisions	Dr Hugh Shercliff
2.45	Balancing Priorities	Mr Mark Phippen
3.05	Time Management	Dr Hugh Shercliff

Aims of the afternoon:

- to present information and ideas to help you to plan and enjoy your studies and other activities;
- to enable you to achieve maximum benefit from your time in Cambridge.

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LECTURES & SUPERVISIONS

Dr Hugh Shercliff

Director of Undergraduate Education

University Senior Lecturer in Materials
Fellow, Girton College

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CONTENTS

- Preliminaries
- People
- Lectures
- Examples Papers
- Supervisions

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STUDY SKILLS

- You are here in Cambridge University:
 - you are intelligent
 - you already have good study skills
- *But*, the course is very different from being taught in a classroom
- So, *you need to adapt your skills to the course*

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PERSONAL RESPONSIBILITY

- You are treated as **adults**:
 - responsible for your own *study and learning*
 - responsible for *managing your time* (lectures, labs, supervisions, sports, social life...)
- **Be honest:** with your Director of Studies, supervisors and yourself
- If you don't work properly, **you** are the one who will suffer – with stress, and low exam grades

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THE ENGINEERING COURSE

- Is highly structured:
 - ⇒ *Lecture timetable*
 - ⇒ *Examples paper schedule*
 - ⇒ *Coursework rota*
 - ⇒ *Supervision schedule*
- Do the set work conscientiously and you won't go far wrong



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“LECTURERS”

- Members of the Department’s Academic/Teaching Staff:
 - ⇒ Professors
 - ⇒ Readers
 - ⇒ Senior Lecturers
 - ⇒ Lecturers
 - ⇒ Assistant Lecturers
 - ⇒ Design Engineers
 - ⇒ Computer Officers
- You will also be taught by Department researchers:
 - ⇒ “post-docs” (with PhDs)
 - ⇒ research students (doing PhDs)
- Often a Fellow at a College

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DIRECTOR OF STUDIES: “DoS”

- College position: responsible for your academic well-being, progress and development
- Oversees your supervisions
- Advises on course choices, jobs etc., and provides academic references
- For *pastoral matters* (health, finance etc), see your *Tutor*.

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SUPERVISORS

- Supervisions organised by DoS in 1st & 2nd year, and by Department in 3rd year
- None on 4th year courses, only for Project
- Could be:
 - ⇒ Your Director of Studies
 - ⇒ A Fellow at your College, or another College
 - ⇒ A research assistant, or graduate student
- Different supervisors cover one or more parts of the course, e.g. Maths, Electrical, Structures, Materials....

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LECTURES I

- Approx. 10 per week, mostly in LT0 in 1st year
- *Main purpose*: to get information and techniques across to students
- First year class large (320!): limited opportunity for interaction with the lecturer during lectures
- Interaction is supplied by **supervisions**

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LECTURES II

- *Should you go to lectures?*
- Attendance is not monitored – no one is going to force you to get out of bed and turn up

But note:

- Lectures are the best way of acquiring the knowledge and techniques that you need
- The lecturer will have organised and customised the information that they know is important
- *Going to lectures is a very good use of your time*

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LECTURE NOTES I

- Note-taking **used** to be a vital study skill
- Most lecturers provide handouts, with key gaps to fill in during the lecture, e.g. worked examples
- *Advantage*: you can listen more carefully, rather than writing frantically
- *Disadvantage*: you may find it more difficult to concentrate – with inevitable consequenceZZZZ

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LECTURE NOTES II

- **Solution:** listen **actively** –
 - ⇒ Use a highlighting pen to emphasise key points
 - ⇒ Fill in all the gaps, and keep up with the lecturer
 - ⇒ Make odd notes in the margins, e.g. if the lecturer shows a good Website
 - ⇒ *Highlight* things you don't understand, to follow up later when there is more time to think (with your peers, or supervisors, or a textbook)

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LECTURE NOTES III

- **Good practice:** review the notes on each course the evening before the next lecture
- **Essential:** review your notes *before* you attempt Examples Paper questions
- *Lecture notes are condensed, targeted resources for your course: use them.*

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FEEDBACK ON LECTURES

- Lecturers appreciate *constructive* feedback
- For presentational problems, tell the lecturer!
- Use the (anonymous) *Fast Feedback Facility* (FFF) to comment on clarity, content, pace, etc.
- Fill in *Lecture Questionnaires* (if issued)
- Do the *On-line Survey* as soon as each course ends
- Vote in the *Best Lecturer* competition
- Contact *Staff-Student Joint Committee (SSJC)*

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EXAMPLES PAPERS

- Issued in parallel with lecture courses (on Wednesdays in 1st year)
- Typically 4-5 each fortnight; take 4-8 hrs each
- Your *main private study material* (supplemented with past Tripos papers for practice)
- Questions are graded:
 - *straightforward* (†): reinforce concepts and practise techniques
 - *Tripos standard* (*): involve a problem-solving element

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HOW TO TACKLE QUESTIONS I

DO

- Review your lecture notes first
- Know what's in the *Data Books*, and use them
- Keep a record of progress and *note any problems you have* – to ask your supervisor
- Persevere: you won't sail through every topic
- Help one another

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HOW TO TACKLE QUESTIONS II

DON'T

- Look at the answer first (at the back of the paper)
- Spend too long on a single question (20-60 minutes maximum)
- Try to complete a whole paper in one sitting
- Rely too much on *cribs* (see later), or your peers
- Give up on the rest of the paper just because you cannot do one question

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HOW TO TACKLE QUESTIONS III

- Interpreting/modelling the problem is often the first and most difficult part of hard questions
- Try to **visualise** the problem clearly:
 - ⇒ Draw a large, clearly labelled **diagram**
 - ⇒ Identify the **physical principles** involved
 - ⇒ Plan and outline the steps in the solution
- Do **not** just hunt vaguely for an equation that seems to involve the right variables

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IF YOU GET STUCK I

- Review your lecture notes (again).
- Check your working (algebraic, arithmetic and “calculator” errors are common)
- Check your diagram and method. Are there alternative solution procedures? Try them.
- Don’t be scared to use **graphical methods** – often very quick and sufficiently accurate.
- Leave it, and come back to it afresh later

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IF YOU GET STUCK II

- Consult textbooks from the booklist (CUED or College library)
- Ask:
 - ⇒ A fellow student
 - ⇒ Your supervisor
 - ⇒ At an Examples Class
- Look at the crib (see below)

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EXAMPLES CLASSES

- Organised by the Department:
11.00 am on Wednesdays in 1st year
- One class (with the Lecturer) for each Examples Papers (see Schedule)
- A “safety net” to support supervisions – ask your supervisor first

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CRIBS I

- Cribs: model answers to Examples Papers and Tripos exam papers
- Usually available in College libraries (some time after the Examples Paper was issued)
- Tripos cribs (for 5 years) on CUED website
- *Only use cribs as a last resort* – beware, they can lead you to **believe** that you understand the material, when actually you **don’t**!

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CRIBS II

- **Good practice:**
 - cover the crib, and reveal the solution bit by bit
 - understand where *every* number or variable comes from in *every* equation or figure
 - stop reading the crib when you think you can proceed
 - try the problem again independently, some time later
- **Do not** just copy out the crib:
 - your supervisors already have a copy (thanks!)
 - there is little demand for this skill in the digital age...

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SUPERVISIONS I

- Typically:
 - groups of two or three
 - two or three supervisions per week
 - one hour long
- Supervisions are for:
 - ⇒ Sorting out problems from lectures, Examples Papers
 - ⇒ Discussing coursework/design exercises
 - ⇒ Going over past Tripos questions, exam technique etc.
 - ⇒ Open-ended discussion about Engineering!

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SUPERVISIONS II

- Supervisions should be **very interactive**
- They are **not** lessons – **you** should drive them
- Can (initially) be a daunting experience: there is nowhere to hide...
 - Remember: supervisors are there to **help you**
 - It is no disgrace to admit that there are things you don't understand or questions you can't do
 - Almost **everyone** finds the course hard – it is designed to challenge able students

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SUPERVISIONS III

- It is totally counter-productive to (try to) mislead your supervisor about:
 - ⇒ How much work you have or haven't done
 - ⇒ How well you understand things
 - ⇒ How well you have tackled Examples Papers etc.
- Experienced supervisors see through deception
- **You** suffer if your deception is successful

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IN A BAD SUPERVISION

- **Supervisor** does **all** the talking
- Supervisor just works through the cribs, or ignores your requests for help
- Supervisor asks:
 - “where is the work I asked you to hand in?”
 - “have you done nothing on this course since I saw you two weeks ago?”
 - you to leave after 5 minutes for doing no work, and your college fines you!

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IN A GOOD SUPERVISION

Supervisees (i.e. *you*):

- Consult in advance about what to discuss
- Arrive prepared with questions:
 - “Can we go over the concept of Virtual Work?”
 - “On Q6 I tried this method, but I'm out by a factor of”
 - “I didn't do Chemistry at school, can you help me to understand?”
 - “I need more practice solving differential equations?”
 - “Can you recommend some past Tripos questions to try?”

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IN A GOOD SUPERVISION

Supervisors steer the session, but get you talking:

- “Most students find Q3 tricky. How did you get on with it?”
- “How accurate is your answer using that graphical method? Is that appropriate for this branch of Engineering?”
- “Why don't you explain your method to the rest of us?”
- “How does the roof of King's College Chapel stay up? Have you been to look at it yet?!”

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A Freshers' Survival Guide

A time of great change

When you came up to Cambridge it was almost certainly a time of great change. You probably felt a mixture of excitement and nervousness - what would it really be like? would you cope with the work? what would the people be like? After being here a little time, the differences between your expectations and the realities began to become clear - some things may have been better than you expected, some didn't live up to your hopes, and others were just different.

Change can be both invigorating and disorientating. Away from familiar surroundings and support, we can find ourselves feeling quite daunted by tasks we would normally have coped with easily. This leaflet aims to help you make the transition as smoothly as possible, so that you can make the most of your time in Cambridge.

Some common feelings

You may have spent quite some time working towards getting to Cambridge, but may not have thought very much about what it would be like once you had arrived. It is very common for people to feel things like these:

- a small fish in a large pool; no longer 'the best'
- that you aren't as intelligent as others, or that you won't understand the work, or you feel like an 'imposter'
- uncertain whether you are here because *you* want to be here, or because someone *else* (e.g. parent or teachers) wanted it
- similarly, the choice of course or subject may not be fully yours, or as you expected
- burdened by the weight of *others'* expectations - for you to be doing well, or having a wonderful time...
- you may feel homesick and find this more difficult than you anticipated
- everyone else may seem to be supremely confident, making friends and doing fine, while you may be feeling quite the opposite!

Some general strategies

Firstly, look after yourself!

It takes time to get to know other people, and for them to get to know you. This means that it is unlikely that others will really know how you are feeling or what you are thinking. Consequently, you need to look after yourself. Putting time and energy into arranging your life in ways that make sense to you and are enjoyable is time well spent.

Know yourself and what you can handle

This is a time when you can experiment and find ways of living that suit *you*. This can take time. But try not to be pressured by others into doing things you do not want to do, that don't feel right for you, or that you are not yet ready to tackle. Allow yourself to work within what you feel able to do, and don't live a lie: be yourself! (Alcohol intake is a good example - whilst it may have its advantages when kept within limits, too much definitely causes problems!)

Confront difficulties

When everything is new, we can waste endless time worrying about things we don't understand or don't know. Don't be afraid to ask; you can save yourself a lot of time and energy by finding out or asking - at the start of the year others will be feeling and doing just the same, so your questions are unlikely to cause any embarrassment. Begin to see these occasions as a challenge rather than as a problem: what can you *do* to change the situation?

Get/stay fit

It is much easier to cope with new challenges when we are fit and healthy, have a good diet and adequate sleep. If you have been a keen sports-person, it shouldn't be difficult to find ways of maintaining this. If not, think about taking advantage of the wide range of opportunities in Cambridge - there is almost certain to be something which suits you.

Managing pressure

There are times during the term when most people feel pressured. Recognise that this is a common experience, and is not just you! 'Listen' to your body and feelings and *work with them* rather than against them. Here are some other ideas:

- plan ahead to reduce pressure
- use pressure positively - to motivate
- separate others' expectations from your own
- try changing the thoughts 'have to' to 'choose to'
- put it all into perspective
- reward yourself; give yourself praise for what you *have* achieved.

Maintain some balance in life

Don't work all the time!

Take time for leisure, physical and social activity, and time to relax. Here are two 'rules of thumb' that you may find helpful and could help you work more effectively:

- take some time off work every day
- take a whole day off work every week.

Do work some of the time!

It is important to keep up to date with your work as you can get a backlog very quickly and it can then feel very difficult to catch up. Problems tend to escalate, so have the courage to tackle them early!

Maintain a balance between time alone and time with others

Friends can be a wonderful support - and a great excuse or distraction! Sort out in advance when you will be able to do things together.

Create a routine/normal pattern for your day/week

Boring as it may sound, having some regular structure to your day/week is likely to help. Depending on your subject and timetable, there can be rather little structure in the student life. 'Structure hunger' can be quite debilitating. We each work effectively in different ways and at different times of day, so devise a pattern that works for *you* - and keep this as your normal routine.

Separate out 'work' and 'not work' times and spaces

It helps to be clear with yourself when you *are*, and are *not* working. Otherwise you can find yourself thinking of all the fun things you're not doing while you are trying to work, and also find it hard to enjoy leisure time as you punish yourself for still having outstanding work. If you have planned out your work and achieved your immediate goals, then allow yourself some fun without any guilt!

Similarly, you may find it helps to separate your room(s) into working and non-working areas, however tiny these areas may be. This can help you to work more effectively when you have decided to and are in your 'work-place' where you keep your books etc., and similarly help you to relax when you want to, *away* from your work.

If you wonder if Cambridge is right for you after all...

It is very common for new students to wonder if they have made the right decisions about their choice of university or subject. However, the great majority do find their feet and enjoy their work and time here.

For some, though, it may be that this isn't the right place or subject. If you are seriously wondering about this, it is important that you speak to your tutor before you make any final decision. The Careers Service or Counselling Service may also be able to help you find the direction that is best for you - whether this is at Cambridge or elsewhere.

When you could use some additional support

There is a wide range of excellent support available in the university, and more that is open to you in the locality. You don't have to maintain an 'I'm OK' image all of the time! If you feel that you need to talk over how you are getting on in Cambridge, seek out someone to talk to sooner rather than later:

- Friends or family
- Tutor or Supervisor
- Careers Service
- College Nurse
- Chaplain
- Student Union or Graduate Union
- University Counselling Service

Cambridge University Counselling Service, 2-3 Bene't Place, Lensfield Road, Cambridge CB2 1EL

TIME MANAGEMENT

HOW TO GET THE MOST OUT OF YOUR TIME AT CAMBRIDGE

Hugh Shercliff
Director of Undergraduate Education

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THE PRINCIPLE

- Identify goals
- Decide on order of priorities
- Formulate plans accordingly
- Take control of how you spend your time
- Work hard and play hard
- Achieve goals!

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PLANS & GOALS

- Long term plans:
 - ⇒ Personal fulfilment: engineering, career, family, relationships, community, sport, fame, fortune, health, religion, politics etc.
- 4 year plan:
 - ⇒ Personal fulfilment:
most of the above – some are obligatory!
+ BA, MEng
+ developing and broadening the mind

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PLANS & GOALS: THE COURSE

- 1 year plan:
 - ⇒ Learn fundamentals of Engineering; enjoy the course; pass Engineering Tripos Part IA
- 1 term plan:
 - ⇒ Stay up-to-date: Examples Papers and coursework; prepare for College test in January
- 1st week plan:
 - ⇒ Understand Cambridge system; find way round; meet people

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WEEKLY & DAILY PLANS

- Identify fixed commitments:
 - ⇒ **Lectures/Labs/Supervisions: 24 hours/week**
 - ⇒ **Private Study:**
Examples Papers (2.5×6 hours) 15 hours/week
Coursework reports etc. 3 hours/week
Reading, reviewing notes etc. 6 hours/week
Average weekly total 24 ± 6 hours
- + **Recreational and social commitments**

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SET PRIORITIES

- Draw up a list of “things to do”
- Split big tasks into smaller ones, e.g. writing a major report
 - ⇒ plan report
 - ⇒ organise the figures
 - ⇒ prepare 1st draft
 - ⇒ proof read, edit and complete report
- Number your “things to do” to indicate priorities

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TAKING CONTROL OF YOUR TIME I

- Plan your week, every week
- Plan your day, every day
- **Use a diary**
- Identify the most important jobs each day, and do them!
- **Do it now!**

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TAKING CONTROL OF YOUR TIME II

- Cambridge has a lot of interesting and worthwhile things on offer
- All being well, you will be here 4 years
- No need to do everything this term / year:
- ask yourself: will there be a later opportunity?
- If you are **well organised**, you can fit an amazing amount in

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TAKING CONTROL OF YOUR TIME III

- **Find out for yourself** how much time the course demands **before** you commit yourself to too many extra-curricular activities
- Learn to say “no”
- If you never seem to have time, find out exactly how you spend it – keep a log

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PLANNING WORK I

- Most of your study needs **blocks** of uninterrupted time (e.g. 1-4 hours)
- Some jobs fit into an odd half hour: use them
- Identify your best **time** of the day for work (early mornings, afternoon, evenings)
- Identify your best **place** for work (College room, College library, CUED library)
- Ensure your workplace is **well-equipped**: heat, light, clear desk, notes, data books etc.

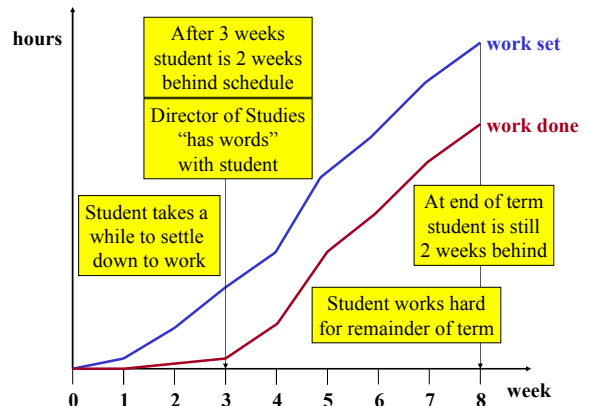
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PLANNING WORK II

- To get maximum benefit from the course, and for least stress: **stay up-to-date**
 - ⇒ Write up practicals the day of the experiment, *not* the day before the mark-up
 - ⇒ Try Examples Paper questions the day of the lecture, *not* an hour before the relevant supervision
- Most students find Cambridge life very hectic – if you fall behind, it is hard to catch up again

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A COMMON STORY



PLANNING WORK III

- Ration your time according to benefit (marks) – remember that Part I coursework is for **standard credit**
- Distinguish between **urgent** tasks and **important** tasks
- Expect the unexpected – leave time for contingencies
- “Just in time” = “Late”, all too often

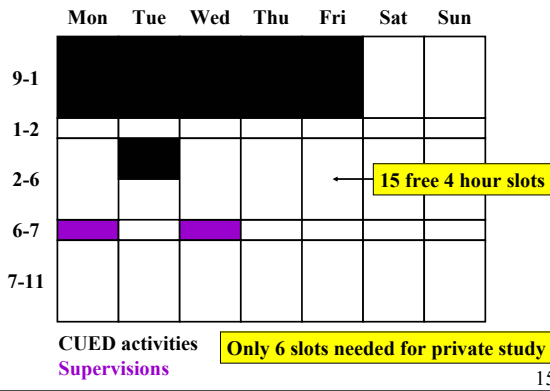
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EXAMPLES OF GOOD ✓ AND BAD ✗ WEEKLY TIMETABLES

FIND YOUR OWN WORKING PATTERN

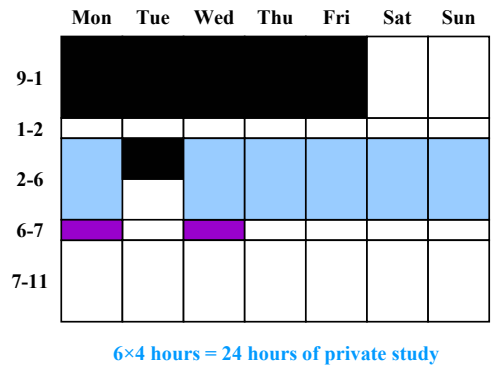
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FIXED WORK COMMITMENTS



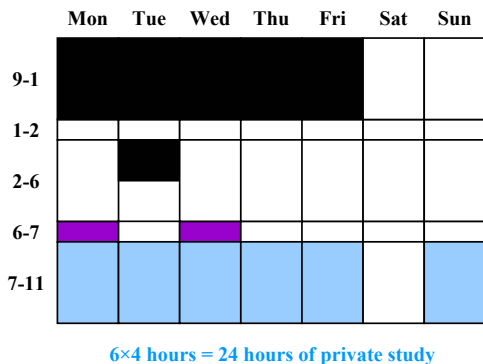
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AFTERNOON WORKER ✓



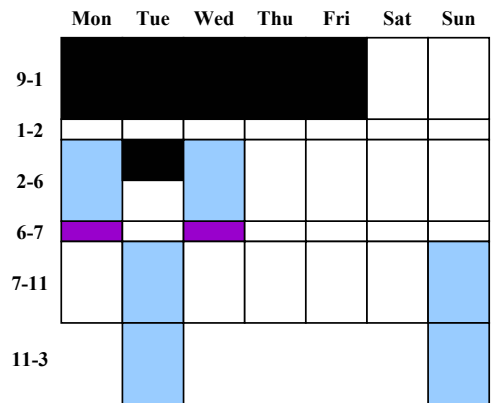
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EVENING WORKER ✓



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SUPERVISION BLITZ WORKER ✗



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THE RUGBY PLAYER



	Mon	Tue	Wed	Thu	Fri	Sat	Sun
9-1	Black					Light Blue	Light Blue
1-2	White	White	White	White	White	White	White
2-6	Red	Black	Red	Light Blue	Red	Red	Light Blue
6-7	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	White	Light Blue
7-11	White	Light Blue	Light Blue	Green	White	White	White

Rugby training or matches

CU ballroom dancing society

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THE BOATIE



	Mon	Tue	Wed	Thu	Fri	Sat	Sun
6-9	Orange	Orange	Orange	Orange	Orange	Orange	White
9-1	Black					White	White
1-2	White	White	White	White	White	White	White
2-6	Light Blue	Black	Light Blue	Green	Light Blue	Orange	Light Blue
6-7	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	White	Light Blue
7-11	Light Blue	Light Blue	Light Blue	Light Blue	White	White	White

Rowing, training, coaching or racing

Language class

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THE MUSICIAN



	Mon	Tue	Wed	Thu	Fri	Sat	Sun
9-1	Black					Light Blue	White
1-2	Light Blue	Black	Light Blue	Light Blue	Light Blue	Green	Light Blue
2-6	Green	Light Blue	Light Blue	Green	Green	White	Light Blue
6-7	Purple	White	Purple	White	White	White	White
7-11	Light Blue	Green	Green	Light Blue	White	Green	Brown

Practice, rehearsals or concert

Chapel

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ANY QUESTIONS?

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