STUDY SKILLS AFTERNOON

Wednesday 8 October, 2.00–3.30pm

2.00	Lectures & Supervisions	Dr Claire Barlow
2.45	Balancing Priorities	Hanya Czepkowski
3.05	Time Management	Dr Claire Barlow

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.

LECTURES & SUPERVISIONS

Dr Claire Barlow

Director of Undergraduate Education

University Senior Lecturer in
Manufacturing, Materials and Sustainability

Fellow, Newnham College

CONTENTS

IMPOSTOR PHENOMENON

Common amongst competent people (especially academics) who are convinced that they are frauds and don't deserve the success they have achieved

Proof of success is dismissed as luck, timing, or of deceiving others into thinking that you're more intelligent than you are

Destructive to self-esteem and confidence:

It's not true! You do deserve to be here!

STUDY SKILLS

- You are here in Cambridge University:

  → you are intelligent and a high achiever

  → you already have good study skills

- *But* this course is very different from being taught in a classroom
- So *you need to adapt your skills to the course, and learn some new techniques*

STUDY SKILLS

- The course is
  - Fast, packed with new ideas
  - Designed to stretch you
- You will find you're capable of more than you'd ever imagined
- But you have to work at it!

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

THE ENGINEERING COURSE

- Is highly structured:
  - ⇒ *Lecture timetable*
  - ⇒ *Examples paper schedule*
  - ⇒ *Coursework rota*
  - ⇒ Supervision schedule

- If you turn up to everything and do the work you are set, you should be OK

CONTENTS

- Preliminaries
- People
- Lectures
- Examples Papers
- Supervisions

"LECTURERS"

- Members of the Department's Academic/Teaching Staff:
  - ⇒ Professors
  - ⇒ Readers
  - ⇒ Senior Lecturers
  - ⇒ Lecturers
  - ⇒ Assistant Lecturers
  - ⇒ Design Engineers
  - ⇒ Computer Officers
- Often a Fellow at a College

DIRECTOR OF STUDIES: “DoS”

- College position: responsible for your academic well-being, progress and development
- Arranges and oversees your supervisions
- Advises on course choices, jobs etc., and provides academic references
- Use your DoS when they ask for ‘Tutor’
- For *pastoral matters* (health, finance etc), see your *Tutor*.

SUPERVISORS

- Supervisions organised by DoS in 1st & 2nd year, and by Department in 3rd year
- None on 4th year courses, only for Project
- Supervisors can be:
  - ⇒ Your Director of Studies
  - ⇒ A Fellow at your College, or another College
  - ⇒ A post-doc researcher, 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 (328): limited opportunity for interaction with the lecturer during lectures
- Interaction is supplied by **supervisions**

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*

LECTURE NOTES I

- Most lecturers provide handouts, with key gaps to fill in during the lecture, e.g. worked examples
- You don't have to write everything down and make your own notes
- *Advantage*: you can listen more carefully, rather than writing frantically
- *Disadvantage*: you may find it more difficult to concentrate – with inevitable consequencezzzz

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

  Follow up by: talking with other students [your peers], or supervisors, or looking on the web, or using a textbook. Then try answering questions (examples).

LECTURE NOTES III

- **Good practice**:
  - Go through the notes from each lecture later that day, tidying up loose ends while you remember
  - 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.*

FEEDBACK ON LECTURES

- Lecturers appreciate *constructive* feedback
- For presentational problems, tell the lecturer!
- Use the (anonymous) *Fast Feedback facility* 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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Engineering **FIRST YEAR**

Part IA Paper 2: Structures and Materials

MATERIALS

Examples Paper 1 – Elastic Deformation and Design

Straightforward questions are marked with a †

Tripos standard questions are marked with a *

You will need to look up data in the Materials Databook, and use the Cambridge Engineering Selector (CES) software.

Elastic Stress and Strain

†1. Draw diagrams to define (i) tensile strain e, (ii) shear strain γ, (iii) Poisson's ratio ν, in the elastic straining of a solid.

†2. (a) Figure 1 shows a typical element of material with Young's modulus E and Poisson's ratio ν, which is subjected to normal stresses σ_1, σ_2 and σ_3. Derive simultaneous equations for the strain in each direction e_1, e_2 and e_3 as a function of these stresses.

(b) Define the dilatation, and derive an expression for the dilatation for a general state of strain e_1, e_2 and e_3 (assuming that the strains are small).

(c) Define the bulk modulus, K, and write down the expression relating K to E and ν (from the Databook), explaining how it is derived. Compare K and E for metals ($\nu = 0.3$) and for rubber $\nu = 0.5$? What does the value for rubber mean physically?

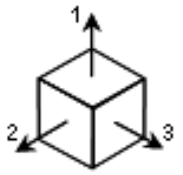

Figure 1

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 exam (Tripos) papers for practice)
- Questions are graded:
  - *straightforward* (†):
    reinforce concepts and practise techniques
  - *Tripos standard* (*):
    involve a problem-solving element

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

  Collaboration is good! Teaching someone else is a great way to sharpen up your own understanding

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
- Give up on the rest of the paper just because you can't do one question
- Rely too much on *cribs* (see later), or your peers
- Just copy things out without understanding them

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

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. Could you try another approach?
- Is there a quick **graphical method** you could try? May be accurate enough

- Leave it, and come back to it afresh later

IF YOU GET STUCK II

- If you can't do a problem, it's because there's something you don't **understand** or **know**
- Try to work out what it is!
- Consult textbook (in CUED or College library)
- Web resources: but try to check accuracy…
- Ask:
  - ⇒ Another student
  - ⇒ Your supervisor
  - ⇒ At an Examples Class
- Look at the crib (see later)

COLLABORATION, CHEATING AND PLAGIARISM

- Collaboration is good:
  - Working together to share knowledge and improve understanding
- Once you can do the work, complete it ***on your own***
- Anything you submit for credit must be your own work
- If you use bits of other peoples' work, you must ***acknowledge*** it (e.g. a diagram, someone else's data)
- If you don't, you are guilty of ***plagiarism***
  - Submitting all or part of someone else's work under your name
- All forms of cheating are bad, and penalties are harsh

EXAMPLES CLASSES

- Organised by the Department:
  11.00 am on Wednesdays in 1st year
- One class (with the Lecturer) for each Examples Paper (see Schedule)

- A “safety net” to support supervisions – generally ask your supervisor first

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 !

CRIBS II

- **Good practice**:

  - Use the crib to give you hints:

    ✓Cover it up; 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 it!

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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

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 the most able students

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

GOOD AND BAD SUPERVISIONS

Supervisor: How did you get on with this examples paper?

Student: I did it all!

Lazy supervisor: OK, go away, see you in two weeks!

Good supervisor: Then let's just explore question 4…
(which reveals that the students didn't fully understand what they were doing…)

IN A GOOD SUPERVISION

Supervisees (i.e. *you*):

- Consult supervision partner 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 got stuck *at this point* in Q7 because I didn't know how to…"

→ "I need more practice solving differential equations"

→ "Can you recommend some past Tripos questions to try?"

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?!"

SUMMARY

The Cambridge course is demanding but should be rewarding
Approach it sensibly, and you'll be fine

There is plenty of support available for you

Just ask

Don't despair

You're surrounded by people who will help – if you ask them nicely, and if you're obviously trying to help yourself

Be realistic: You (probably) can't be best at everything, but you can be good enough
Remember your successes! You ***can*** do this course!

Balancing Priorities

University Counselling Service
Hanya Czepkowski

Change can be great

- Cambridge = Fantastic opportunities
  - New town
  - New university
  - New course
  - New people
  - New culture
  - New activities

Change can be unsettling

- Experiencing a lot of change can be unsettling = Normal

- Coping with a lot of change → confusion, disorientation, feeling overwhelmed
  - Trouble sleeping
  - Changes in eating patterns
  - Minor illnesses
  - Difficulty concentrating and working
  - Withdrawing socially

- Takes time to adjust

Strategies for coping

- Look after yourself
- Balance

  Don't work *all* the time

  Do work *some* of the time!
- Develop a regular pattern for your day and week

Manage yourself positively

- Encourage yourself every day
- Acknowledge your successes
- Set yourself small, achievable, daily goals
- Structure can be very helpful
- Look after yourself – Eat well, have fun, and sleep
- Choose your friends wisely
- Don’t be afraid to ask for help sooner rather than later

Be pro-active

- Engage in self-reflection
- What issues have you encountered in the past when you were studying …. ?
- Anything that hinders progress?
- What can you do to prevent that from happening again?
- What helps to support you and your studying?
- If you could do one thing right now, what could it be?

Sources of support

- Friends & family
- Tutor
- Supervisor / Director of Studies
- College Nurse and Chaplain
- College Unions & CUSU
- Counselling Service

Counselling Service

- Professional and experienced staff
- A range of ways to help address problems
- Confidential
- Listening and understanding
- Respecting and not judging
- Supporting – and may be challenging too

What kind of problems?

- Relationships
- Identity
- Settling in
- Stress & anxiety
- Depression
- Bereavement & loss
- Social anxiety
- Perfectionism
- Self-esteem
- Procrastination ……

Ways of addressing problems

- Self-help resources
- Workshops
- Guided CBT self-help group
- Focused groups and courses
- 10-week undergraduate therapy group
- Consultation with a counsellor, CBT therapist or Mental Health Advisor

Self-help resources

UCS leaflets

http://www.counselling.cam.ac.uk/selfhelp/leaflets

Web links

http://www.counselling.cam.ac.uk/selfhelp/weblinks

Books

http://www.counselling.cam.ac.uk/selfhelp/books

Group & workshop programme

Michaelmas term

http://www.counselling.cam.ac.uk/studentcouns/studentgroups

Counselling Service

- 2-3 Bene't Place, Lensfield Road
- Opening times

Mondays	9.00 a.m.- 5.30 p.m.
Tuesdays	9.00 a.m. – 7.30 p.m.
Wednesdays	9.00 a.m.- 5.30 p.m.
Thursdays	9.00 a.m. – 7.30 p.m.
Fridays	9.00 a.m.- 5.00 p.m.

- See our website for more information and to book appointments:

www.counselling.cam.ac.uk

Thank you

- And enjoy your time in Cambridge!

TIME MANAGEMENT

HOW TO GET THE MOST OUT OF YOUR TIME AT CAMBRIDGE

Dr Claire Barlow
Director of Undergraduate Education

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!

PLANS & GOALS

- Long term plans:

  ⇒ Personal fulfilment: engineering, career, family, relationships, community, sport, fame, fortune, health, religion, politics etc.

- 4 year plan:

  ⇒ Personal fulfilment:
  some or all of the above, to greater or lesser extent
  + BA, MEng
  + developing and broadening the mind

WHAT'S IMPORTANT FOR YOU?

Get a balance between three main areas:

academic work

non-academic activities

'down-time' social activities

Do *enough* of each (personal preferences: your priorities)

AND: always leave time for the mechanics of life (eating and sleeping)

If you manage your time well, you can fit in amazing amounts of things!

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

WEEKLY & DAILY PLANS

- Identify fixed commitments:

⇒ **Lectures/Labs/Supervisions: 24 hours/week**

PLUS

⇒ **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**

SET PRIORITIES

- Draw up a list of “things to do”
- Split big tasks into smaller ones

  e.g. when 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

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!
- **Start doing it now!**

TAKING CONTROL OF YOUR TIME II

- Cambridge has lots of interesting and worthwhile things on offer
- All being well, you will be here 4 years
- Don't have to do everything this term / year:
  - ask yourself: will there be a later opportunity?
- If you are **well organised**, you can fit in a huge amount

"If you want something done, give it to a busy person"

TAKING CONTROL OF YOUR TIME III

- **Before** committing yourself to too many extra-curricular activities**, discover** how much time the course demands ***for you personally***
- Learn to say “no”
- If you never seem to have time, find out exactly how you spend it – keep a log
- Learn to make good use of little bits of in-between time: it all adds up

PLANNING WORK I

- Most of your study needs **blocks** of uninterrupted time (e.g. 1-4 hours)
- Some jobs fit into odd half hours: 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.

PLANNING WORK II

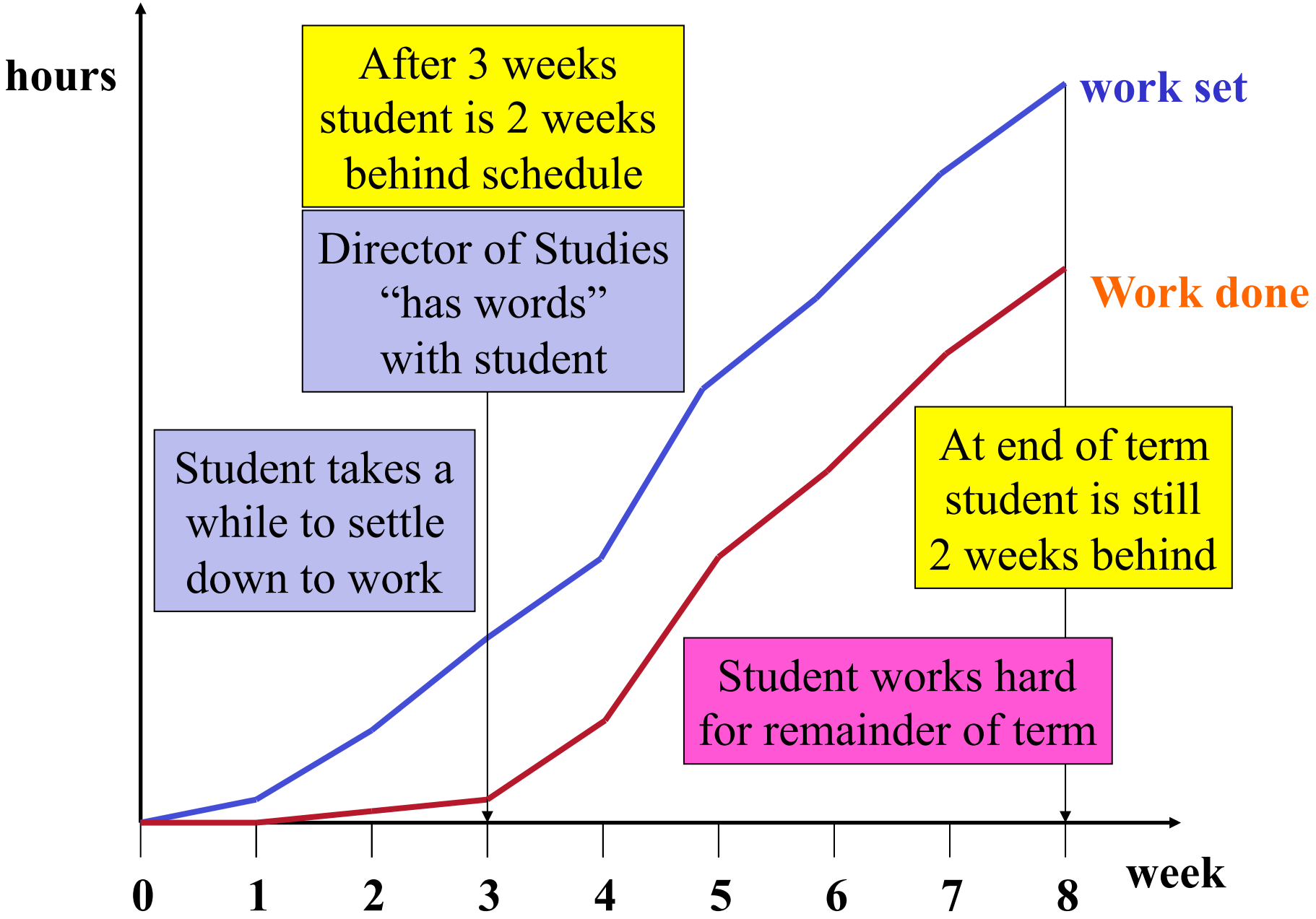
- To get maximum benefit from the course, and for least stress: **stay up-to-date**

  ⇒ 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

A COMMON STORY



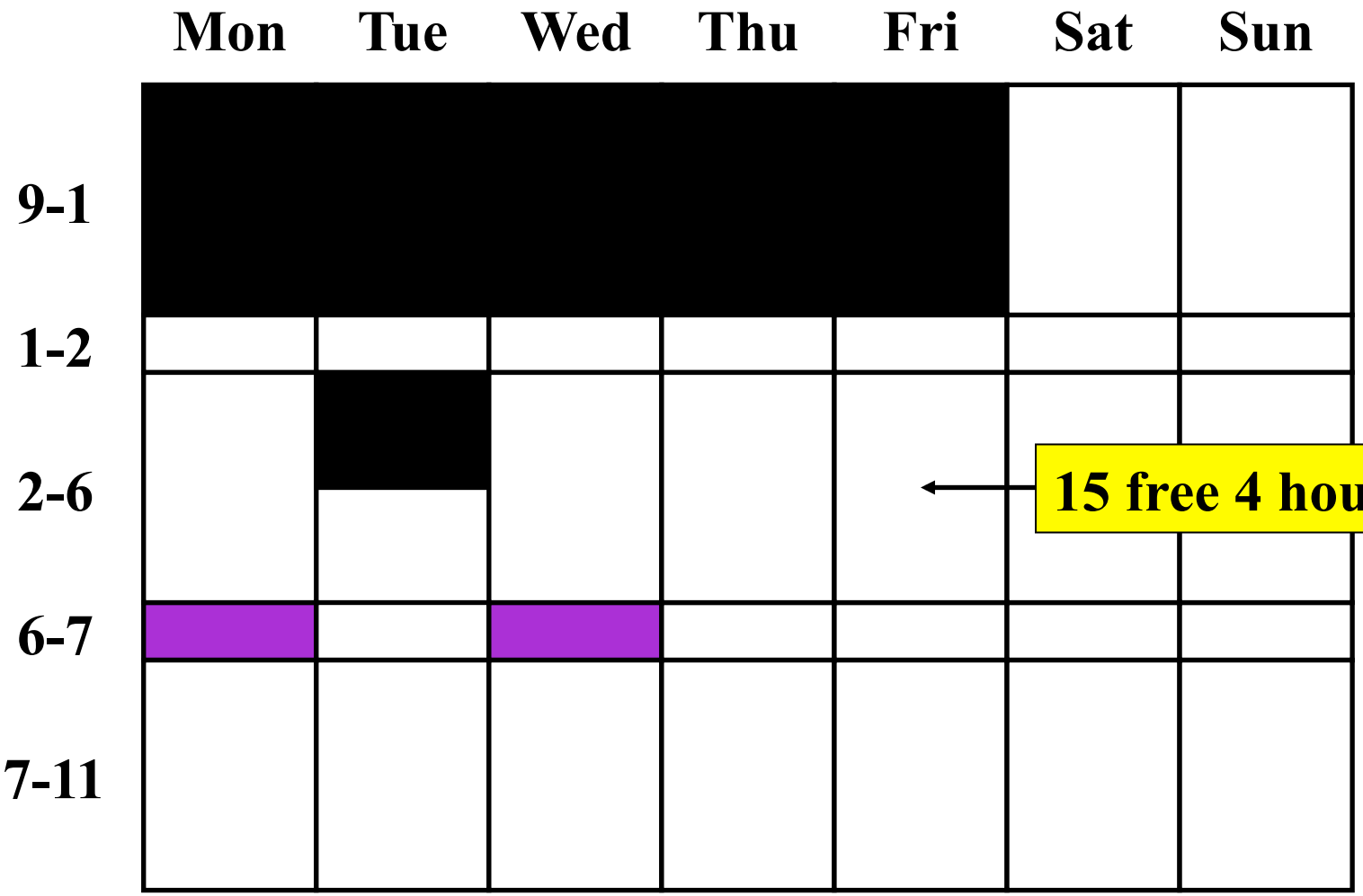
PLANNING WORK III

- Ration your time according to benefit (marks) – remember that Part I coursework is for **standard credit**
- Prioritise: identify **important** tasks; check **when** results must be delivered; partition your time appropriately to meet deadlines
- Expect the unexpected – leave time for contingencies
- “Just in time” = “Late” - only too often!

EXAMPLES OF GOOD AND BAD WEEKLY TIMETABLES

FIND YOUR OWN WORKING PATTERN

FIXED WORK COMMITMENTS



CUED activities

Supervisions

Only 6 slots needed for private study

AFTERNOON WORKER

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
9-1							
1-2							
2-6							
6-7							
7-11							

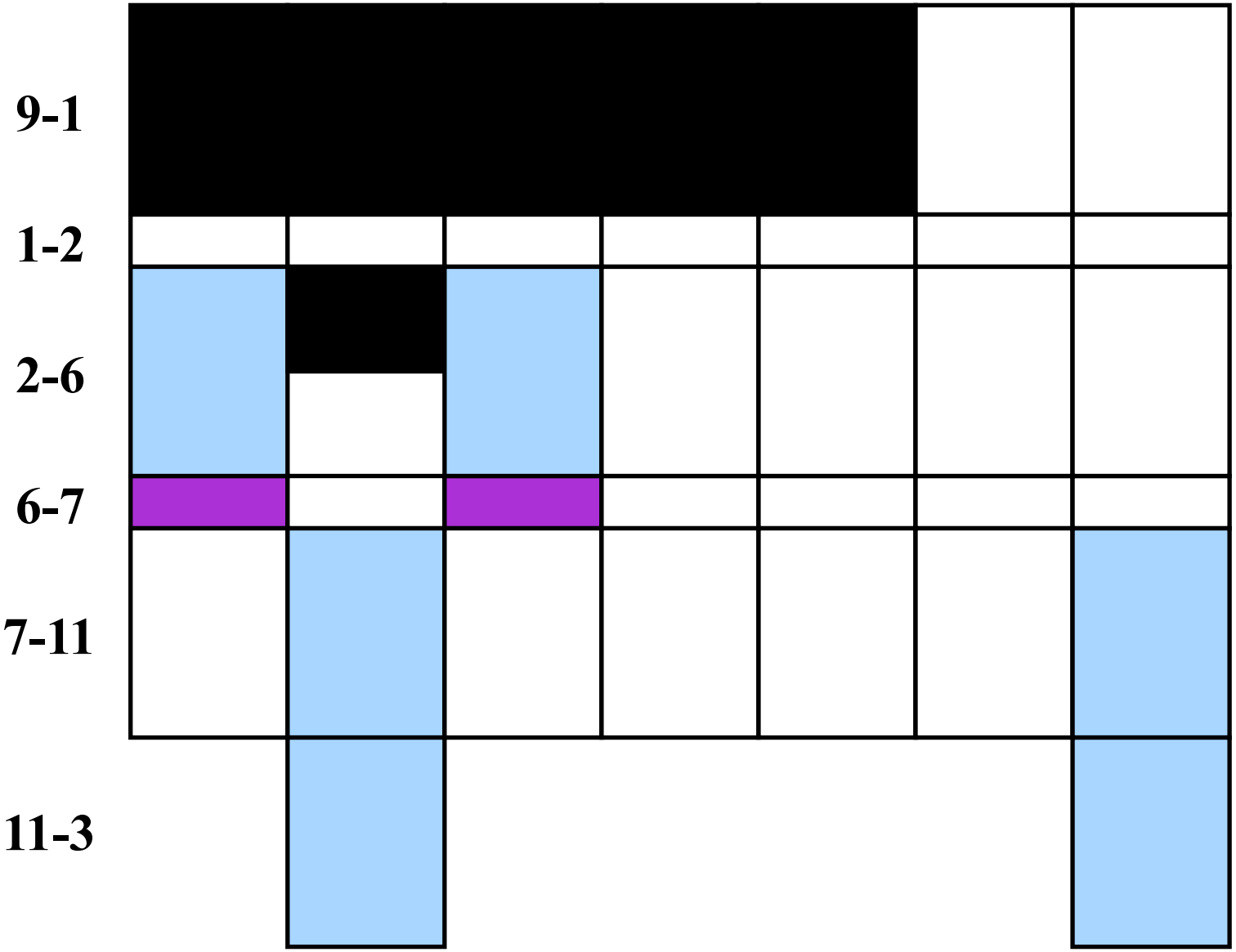
6×4 hours = 24 hours of private study

EVENING WORKER

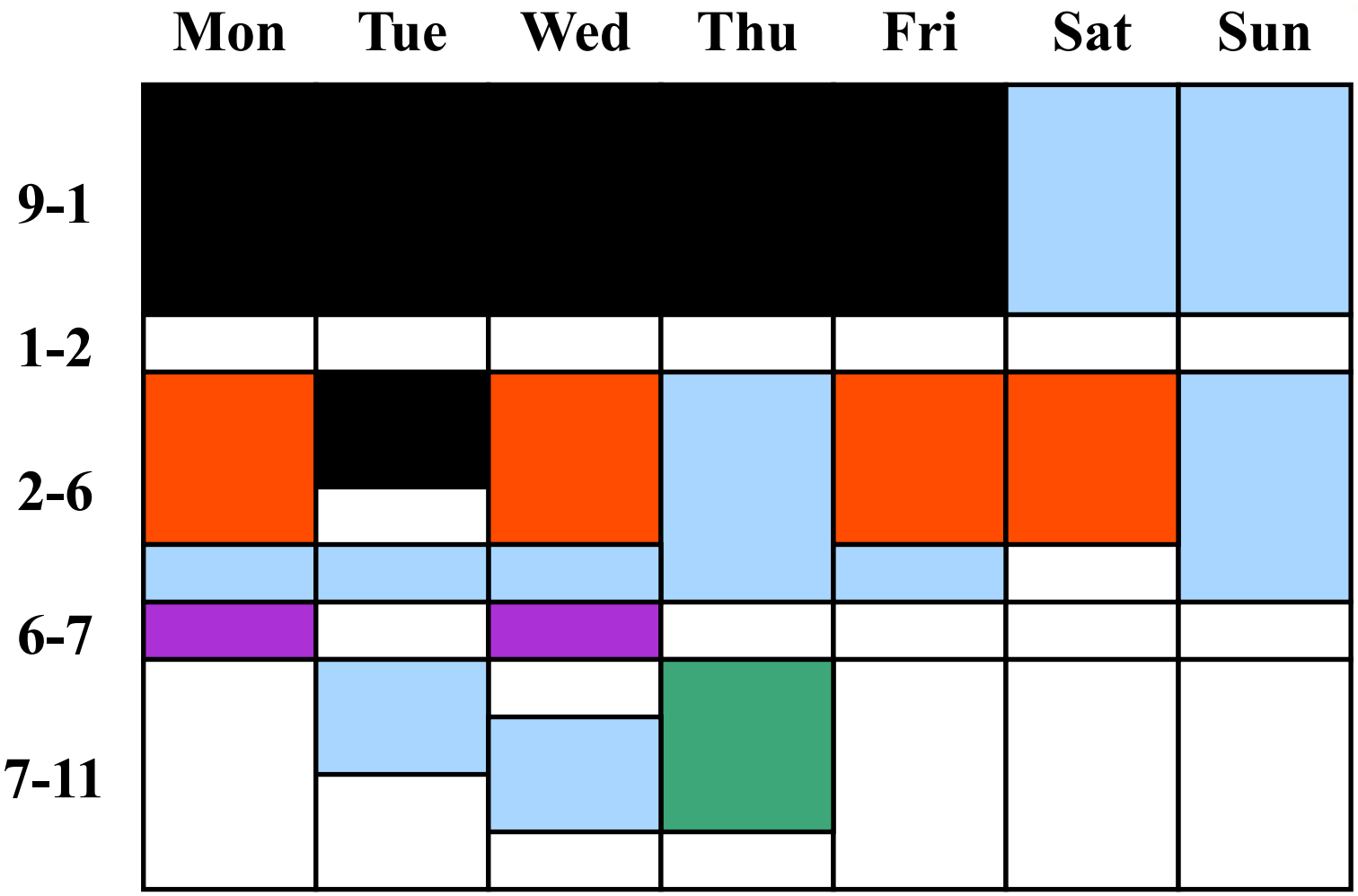
	Mon	Tue	Wed	Thu	Fri	Sat	Sun
9-1							
1-2							
2-6							
6-7							
7-11							

6×4 hours = 24 hours of private study

SUPERVISION BLITZ WORKER



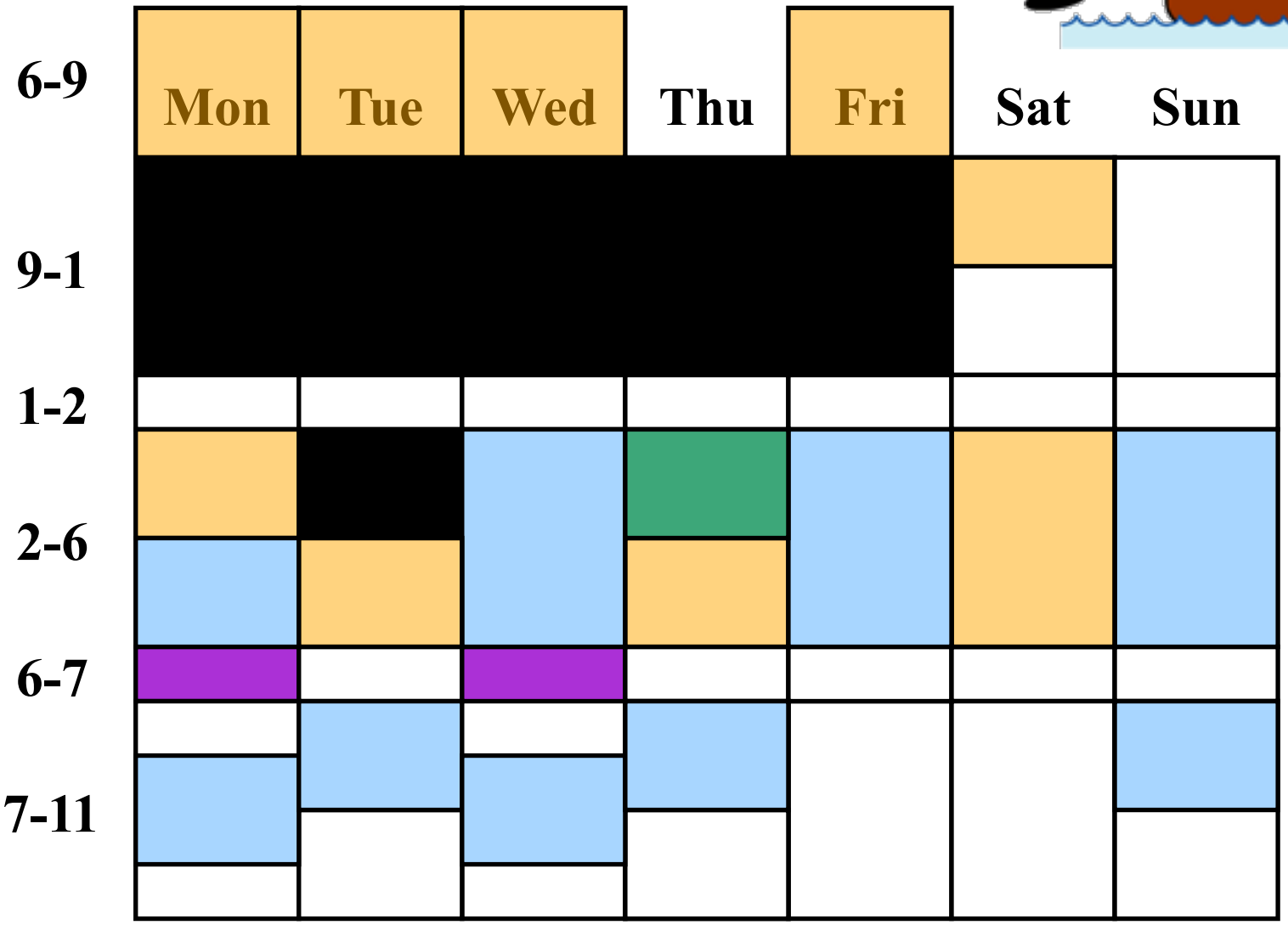
THE RUGBY PLAYER



Rugby training or matches

CU ballroom dancing society

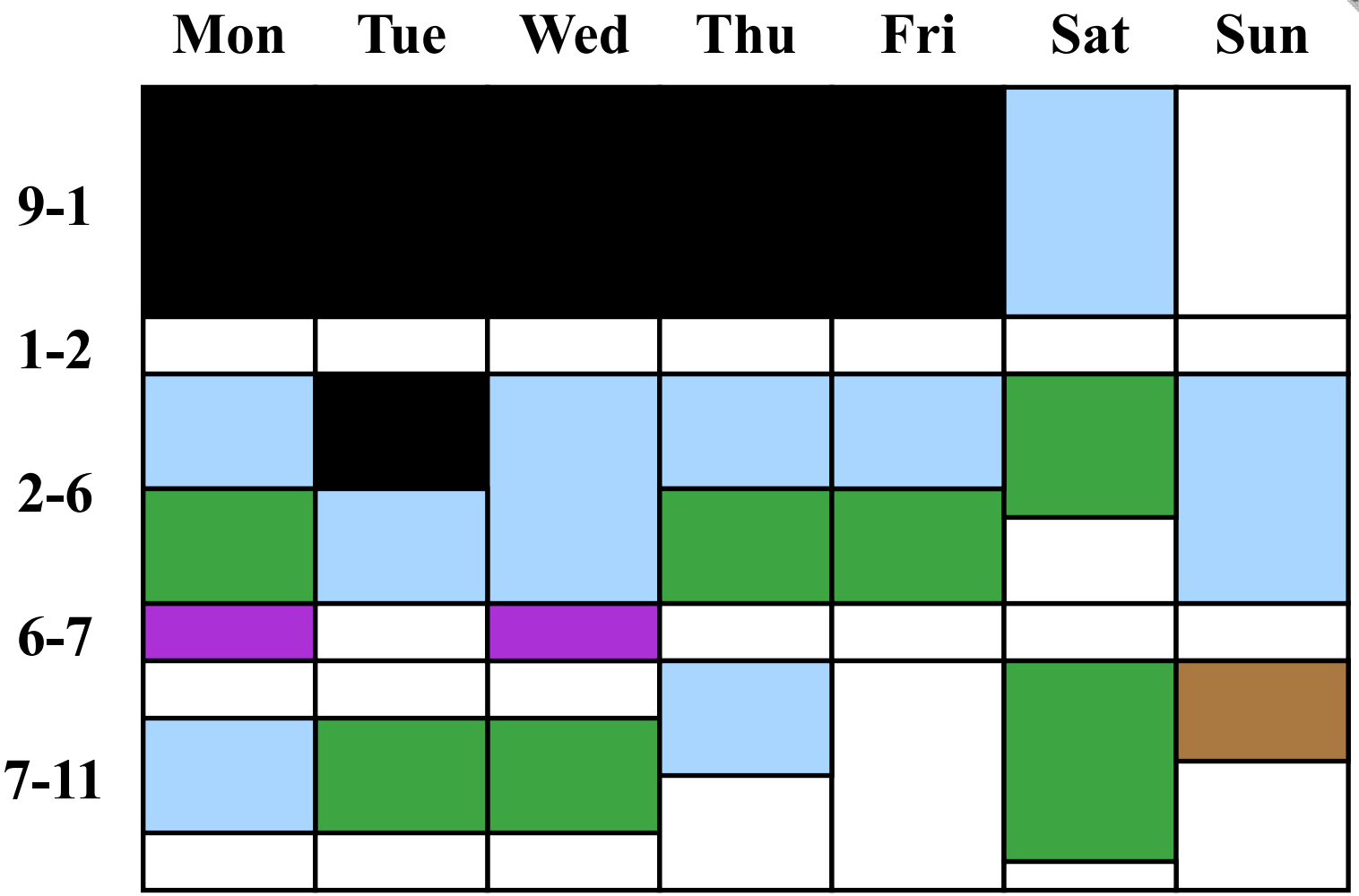
THE BOATIE



Rowing, training, coaching or racing

Language class

THE MUSICIAN



Practice, rehearsals or concert

Chapel

SUMMARY

If you're well organised, there's enough time for everything

Find out what you need to do
Understand how you work best
Don't over-commit to non-academic activities (societies etc)
Plan accordingly!
Use your time fully:
    do small tasks in odd moments
    safeguard blocks of time for serious work
Don't forget to eat and sleep!

Strike a balance: don't work all the time, but do **enough**