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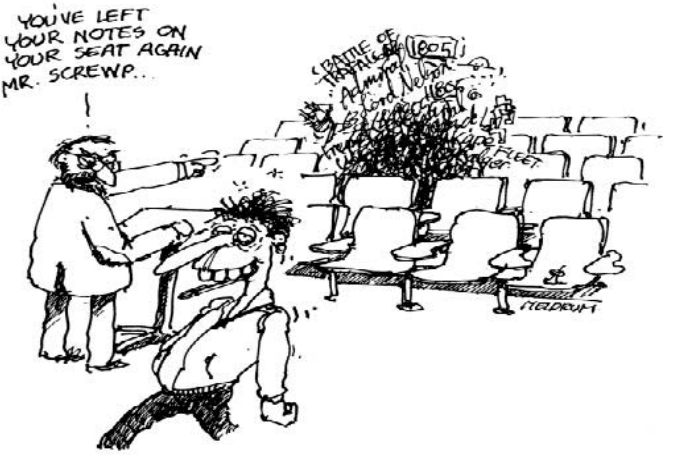
Note-taking



- Warming up before your lectures
- Becoming a more efficient note-taker
- The structure of lectures
- Revising soon after the lectures
- Learning your lecture notes week by week
- Revising your notes before your exams
- Glossary of note-taking symbols and abbreviations

Lectures have been the traditional form of communicating information in higher education institutions for hundreds of years. While an argument could be made for other forms of

teaching, the lecture seems to be a firmly entrenched educational practice.

Josie was an enthusiastic first-year university student who was living in one of the campus colleges. She became involved in a whirlwind social life within the first weeks on campus and found that the late night bull sessions interfered with her lecture attendance anytime before 11.00 am. When she did arrive for these `early' lectures, she was often late and poorly equipped (no pen, the wrong note pad, and certainly no previous warm-up for the lecture topics). After finding a pen from a willing neighbour, Josie took notes on wrinkled bits of notepaper, in between exchanging gossip and making arrangements for her next weekend party activities. When the mid-semester exams arrived, Josie was still having a ball, but she was very poorly equipped academically. The odd bits of notes which she could locate resembled hieroglyphics (and she wasn't studying Egyptology). During the exams, she realised she had absolutely no chance of passing. Fortunately, she responded to this early crisis and sought counselling.

Josie's plight is not unusual. Many students do not know how to make the best use of the lecture situation. Your major job as a student is to listen *actively* during the presentation and to take down a good set of lecture notes. If you are uncertain of the difference between active listening and just hearing, see the preceding chapter. Active listening is the basis for effective note-taking.

You might well ask why take notes during the lectures. Mainly because your brain will undergo a perfectly normal leakage in short-term memory of about 80 per cent in 24 hours. That means you will hold in your short-term memory only about 20 per cent of the content of any lecture one day later. That leakage will continue as time progresses, meaning that your recall could well be next to nothing by exam time. Walking into an exam with little if any recall of the lectures is an agonising form of academic suicide.

The solution to the memory leakage problem is prevention. It's just like preventing a leaking tap from draining a crucial water tank. You simply put a washer in the system to keep the water supply safe. Instead of putting washers into your brain, I am suggesting putting revision into your notes. That will help to halt the leakage. To obtain the best possible set of lecture notes,

you should start well before your lectures commence. Let's look at the important steps in the note-taking process.

Obtain a syllabus for every subject being studied

Most courses these days will have a syllabus which outlines the scope of the topics to be covered during the lecture series. The syllabus might also include the weeks when the topics will be covered and recommended readings in key references. A final and very important feature of the course syllabus is a guide to how you will be assessed. All of these features make the course syllabus a very important student resource to be used throughout the academic semester. If, perchance, your lecturer does not distribute a syllabus, it is perfectly reasonable to tactfully ask if one is to be provided.

Warm up your mind before each lecture

Most athletes who train regularly would strongly advise any contender at the championships to warm up thoroughly prior to competing. Why? Because the muscles of your body work much more efficiently when they are warm and the ample blood supply is providing a ready source of oxygen. The warming-up process also helps to prevent sprains and other sport injuries.

The same principle applies to warming up the brain prior to your lectures. However, the rationale for warming-up is more cognitive than physiological. Your mind is not going to generate an oxygen deficit during most ordinary lectures and the brain cells are not likely to incur any injuries. However, your mind will certainly benefit from some preparatory exercise prior to your lectures.

Most students unfortunately walk into their lectures without any familiarisation of the topics to be covered. It's much like standing on the steps at a city railway station trying to meet a person you do not know. Thousands of people flow from the doorway and you survey the faces. As you are not familiar with the person to be met, one face seems much like the next. Your task proves to be more difficult and more perplexing than need

be. The solution: know what to look for. In the example at the railway station, a photograph would be very handy.

For the students who have not prepared prior to the lecture, all of the ideas, terms and concepts being presented might well blend into the other words and seem to be a vegetable soup. However, the prepared student has the distinct advantage of recognising the important terms and concepts when they are introduced during the lecture. While the unprepared students are either frantic or confused, the students who have warmed up are calmly getting on with their note-taking in an effective and efficient manner.

The warming-up process is really just a short browse through the reference source. As mentioned earlier, the reference is very likely to be included in the syllabus. Find the chapter or section pertaining to the topics scheduled for the next lecture and run your eyes down each page. Note any topic which is in **bold-face** print, *italics,* or is included as a section heading or title to a chart or graph. These are topics which the editors have probably designed to `jump off the page' and thus make the material more readable. You might want to question in your mind what does this term mean and how does it relate to the other terms being presented in this chapter. You might also want to write the term in a notebook just to graphically lodge it in your mind. The whole warming-up process should take only about five to ten minutes.

Having browsed the reference material, your task in the lecture will be made much easier as you will know what is important. Most students who have not done any pre-lecture browsing will be caught in a state of frequent stress trying to decide whether to take notes on a particular topic or to leave it. Having familiarised yourself with the material, you can proceed confidently with your note-taking and avoid this state of indecisiveness.

In addition to browsing through the reference chapter, another warming-up process which is particularly helpful is reviewing the notes of your preceding lecture. As lectures are generally presented in series, the present lecture will probably pickup where the previous one finished. In the few minutes before the start of each lecture, run your eyes over your previous lecture notes to refresh your mind about the topics which were

covered. You are then ready to start in an informed state when the lecturer begins.

Thus, warming up your mind has many advantages: it starts the learning process early; it equips you to be more selective and decisive in your note-taking; and it helps you to produce a better set of notes.

Efficient note-taking

Jennifer was a 42-year-old mature age student who had previously worked for many years as a shorthand stenographer and private secretary in a multinational legal firm. She prided herself on being very thorough and she looked forward to using her very proficient shorthand skills during her lectures. Jennifer attended every lecture and took down in her notebook every umm, ahh, joke, anecdote and quip uttered by each lecturer. At the end of each day, she transcribed the lectures and produced by the end of the semester four impressive volumes, one for each of the subjects she was studying.

While these transcriptions were very neatly presented and totally comprehensive, Jennifer had one major problem — she worked so long and so hard at producing them that she did not have adequate time to learn the notes. The problem was compounded by the fact that there were simply too many notes. Perhaps 20 per cent of what was recorded and later transcribed was irrelevant.

The solution was fairly straightforward. Having learned that she had to become more selective and discriminating in her note-taking, Jennifer made a firm practice of preparing prior to each lecture so that she could recognise the essential terms and concepts when they were presented. Her shorthand skills were still used, but selectively so. With a prepared mind and practised hand, she was able to obtain an excellent set of notes. She continued to transcribe the shorthand notes, even though this process is *not* recommended. For most students, writing notes again is too time consuming. However, her typing speed minimised the time expenditure and she claimed that the transcription process was a learning experience, which in fact it probably was.

The lesson to be learned from Jennifer's case is that recording too many notes can be almost as problematic as not having enough. The key strategies are to prepare your mind before the lecture and then be selective in what you take down in your notes. For best results, it might be helpful to look at the overall structure of most lectures so that you can recognise the critical parts.

The structure of most lectures

While every lecture will vary somewhat in the style and format, most lectures can be conveniently divided into three basic parts: the introduction, the body and the summary. Let's look at each in turn.

The introduction is presented at the very start of the lecture and generally comprises a brief overview of what will be discussed in the body. When there is a series of lectures being presented on a given subject, some lecturers might present a brief summary of what has been presented in the preceding lecture(s) to help you get oriented. Whatever the actual content, the introduction is a prime opportunity for you to warm up for the presentation. Your mind should be listening acutely for any mention of the terms and concepts which were (one hopes) noted when you browsed through the reference sources prior to the lecture. As mentioned earlier, the very fact that you recognise several of these key terms will cause them to have a much greater impact upon your mind.

In addition to getting your mind into gear for the lecture, the introduction is also the time for you to be organising the essential equipment which will be necessary to get a good set of notes. The fundamentals hardly need mentioning, but for completeness, let me say that you will certainly need at least two pens (Murphy's Law states that your pen will run dry just at the most critical point in the lecture). One of the pens might be red. You might also want to bring a highlighter. You then have the means to emphasise certain terms for later attention.

Try various types of note-taking `systems', including loose-leaf tablets on clipboard, bound notebooks, or different types of filing folders. Having tried most of the range, I found the loose-leaf paper and clipboard to be the most flexible. While speaking

of paper, you might need some graph/log paper, lined paper or coloured paper, depending upon the subjects you are studying. If you choose the loose-leaf method, select paper with reinforced holes for secure filing in your notebooks. Your campus or local stationery store will be able to supply most of your needs.

Other types of equipment which might be necessary include ruler, compass, and calculator, once again depending upon the nature of your studies. Arriving at a lecture and not having the requisite equipment will cause some anxiety and considerable inconvenience. You will not boost your popularity rating amongst your classmates if you insist on borrowing their equipment during lectures on more than one occasion.

Having discussed what happens during the introduction and how to get set for active note-taking, let's look at the body of the lecture, the section in most lectures where the key concepts are presented.

The body of most lectures will vary, depending upon the discipline. For example, science and mathematics lectures will often be quite straightforward. There might be problems presented with various steps for arriving at solutions. Or, there might be lists of characteristics or charts and graphs describing some phenomenon. Generally, there is no doubt about the major concept being discussed and there will often be a clear approach to the presentation.

While science-based lectures might tend to be clear, some lectures in the arts and humanities might be more discursive. That is, you might experience some difficulty differentiating what are the crucial points from the more illustrative or tangential aspects. That is not to say that lecturers in these disciplines are less clear thinking. It is just the nature of the topics being presented.

The task for students in all types of lectures is to get a good set of notes. Basically, you will have to tune your mind to think analytically and selectively to obtain the best results. Keep your mind on target by asking both analytical and selective questions. What is the meaning of this term? How does this concept relate to the one just presented? What causes this phenomenon to occur? What are the future implications or ramifications of this event? These questions help you to extend your thinking and obtain a better understanding of the lecture. They will also keep you awake!

The final part of most lectures is a summary of what was just presented. Many students respond to the words, `In summary . . .' as a signal to turn off mentally, slap their notebook shut and head for the exit. Those who stay put and look over their notes as the lecturer recapitulates will find that they derive considerable benefit from this brief investment of time and attention. It is the prime opportunity to locate any areas of omission or confusion. If you discover a point of poor understanding, then approach the lecturer straightaway and try to get it explained. If you do not have the opportunity immediately, then see the lecturer as soon as possible later that day.

Concentrating during lectures

Where do you think the students who gain the highest marks sit in a lecture theatre or classroom? Those who have read Chapter 3 already know. Most other readers with any tertiary experience will say right in the front rows. They are absolutely correct.

Let's say that you are sitting in an optimal position for listening actively to the lecturer, but the basic problem is boredom. Even the most scintillating lecturers can seem boring at times. One of the problems is that most people speak at between 120 and 180 words per minute, but your mind can process words at about four times as fast. If you find boredom setting in, try to prompt more attention by guessing where the lecture is going. Challenge your mind by asking what relationships exist between the present topic and the preceding ones. Ask yourself about the ramifications of lecture topics presented so far. If you have an egocentric bias (and we all do to some extent), ask yourself how the topic being discussed relates directly to you. Any question you ask yourself is likely to improve your concentration. If all else fails, the time-honoured self-administered pinch can do wonders. The following case study is typical.

Ben was a third-year technical college student studying for a diploma in mechanical engineering. He consulted me because he had failed several subjects twice and was being asked by his department to justify his readmission. During the interview, Ben said that even though he was very committed to mechanical engineering, he questioned within himself whether he had the

ability to do well in the field. As his confidence began to wane, so did his concentration.

The approach taken with Ben is probably applicable to most students whose lecture room concentration is weak. You will hear about the Rule of 3 several times in this book, and this is your first instalment. I suggested to Ben that he attend every lecture and no matter what his mood might be, he ask himself several times what are the three most examinable points being presented in this lecture. That question had both immediate and longer term relevance to him. It spurred his concentration there and then and helped him to identify topics which could win him marks at the next examination.

In addition to the Rule of 3, I strongly recommended that he prepare for every lecture and that he liaise with his teaching staff about any difficulties he might be having. Previously, he avoided the staff because he thought they would think he was dumb if he asked for a concept to be explained again. He was surprised to find that the staff were both friendly and eager to help. The outcome of Ben's dilemma was that he was re-admitted to his course and eventually graduated. At a follow-up interview after he had started work, he mentioned that he still applies the Rule of 3 when receiving complicated instructions or sitting in long meetings. Learning how to listen and concentrate in his college lectures was of considerable help in the longer term.

Handling overheads

Most students will be very familiar with the overhead projector which is now a standard piece of teaching equipment found in virtually every lecture hall and classroom. While the overhead projector has allowed teaching staff to prepare neat and clear notes prior to their classes, this teaching aid has presented some problems for students. The basic difficulty is that the lecturer can proceed at what might seem to be a blistering pace, slapping a rapid series of transparencies onto the projector to a chorus of moans and groans from the students who cannot keep pace.

There are several ways you can cope more effectively with this familiar problem. Firstly, be prepared for these lectures.

Know your texts and reference sources. If you recognise a graph or chart and do not have time to get all of the details, get the title of the graph and note in the margin, *See text for graph.* That evening you can transfer the chart into your notes at a more comfortable pace. There is a second strategy to consider. Lecturers will often present essentially the same lectures year after year with small updating changes. Ask former students who performed well in the subject if you might use their lecture notes as a briefing medium to help you cope better. Thirdly, if you still find it difficult to keep pace, discuss the problem with other classmates and consider seeing the lecturer as a group and suggest a slightly slower lecture pace.

Note-taking speed

Not everyone will have the opportunity to learn formal shorthand, but you can develop your own system. Basically, you will want to devise a range of symbols and abbreviations which allow you to take notes more efficiently. You will most likely be familiar with the mathematical symbols for addition, subtraction, multiplication and division. Science students will be familiar with the use of horizontal arrows indicating yields and vertical arrows symbolising gases. What is being suggested is that you develop your own set of symbols which relate to the common terms, concepts and procedures frequently encoun-tered in your lectures. A sample glossary of notetaking symbols and their meanings is set out below. Start your own glossary and as new and frequently used terms emerge in your lectures, devise a symbol or abbreviation and record it in your glossary so that you know the meaning when your notes are being revised.

→ leads to, causes, direction
↑ increase, much, elevate, high
↓ decrease, descend, low, little, few
↔ both ways, either way

=	equal	N	birth
≈	approximately	†	death
∴	therefore	⇒	implies

♂	male, ♂ father	∵	because
♀	female, ♀ mother	b/w	between

>	greater than	×	times, multiply
<	less than	@	at, each
≠	unequal	&	and
Δ	change		
+	add to, plus	c̄	with
-	take away, subtract	re	about
÷	divide	WRT	with respect to

Subject-specific abbreviations
EEG electroencephalograph
GNP gross national product

Silence, a signal?

Good lecturers will often use long pauses and silence for various purposes: to give emphasis to a particular point just presented; and to allow students some time to get an important or complicated point down into their notes. Unfortunately, some students act more like robots who respond only to verbal stimuli. That is, when the talking stops, they stop. In order to get the best possible set of notes, be alert to the possible implications of pauses and silences. They are often there for your benefit.

There are also certain key words which should cause caution lights to flash in your mind. They include: *examinable, assessable, must know,* and any other term which suggests that the present concept is very important and it's likely to appear on an examination paper.

Practical pointers to obtain good lecture notes

- Know what topics will be presented. Consult your syllabus and browse through the reference materials before each lecture.
- Note the title of the lecture, the lecturer's name, and the date on the first page of your notes.
- Number your pages in case they get out of order or dislodged from your notebook.
- Leave plenty of open space on each page for supplementary notes.
- Organise your notes as you listen. If you prefer an outlining

approach, then number and letter as you go.
- Have several different coloured pens available plus a highlighter to make important points more prominent.
- Make notes to yourself in the margins, such as, Know for exams! Good essay question topic. Unclear. Get help.
- Be sure to note special diagrams, charts and graphs. If there is not sufficient time to record them entirely, ask the lecturer for the reference.
- Be flexible and adapt to the lecturer's presentation style.
- Avoid rewriting your notes. It's very time consuming. Improve your note-taking skills to obtain the best possible notes during each lecture.
- Should ancillary notes be needed, write the supplementary information on small slips of paper and tape them to the top, bottom and free side of your note sheets to obtain a complete treatment on the topics.
- When the lectures are dealing with complex issues and intricate diagrams or charts, consider taking your text or reference source to class with you.

For maximum marks . . .

Do you recall what percentage of information leaks from your short-term memory in 24 hours? Rather than go scrambling through the earlier pages, it's 80 per cent. That means by the weekend, your recall of most of the lecture content of the preceding week will be scraping bottom. In order to get your memory cells working for you, you will have to be willing to tolerate a bit of hard work. In order to obtain high marks on your exams, reserve a few hours *each weekend* and go through your lecture notes and *learn* them as if you were going to be examined the following Monday. Learning as you go requires discipline, but the results are beyond dispute. Periodic learning is far superior to cramming, even though cramming has been a student tradition for hundreds of years.

Exam day will arrive, no matter what you do. That's when the bulk of marks are either going to be won or lost. Your notes will be your major study resource, but you will need to work your way through them at least four to five times. Most students manage once or twice, but that will only get them to the level of familiarity. If you want to do well, you will want to be more

than just casually familiar with your notes — ideally, you will want to know them thoroughly.

Think of your knowledge level as a handful of dry sand. If you walk into the exam room and begin to get nervous and shake just a bit, the sand will fall from between your fingers. Metaphorically speaking, it's much better to enter the exams with your knowledge symbolised as rock-hard granite. No matter how much shivering and shaking you might experience, the granite will not crumble — there will be no breakdown in your recall. Remember, that rock-hard knowledge comes with many revisions of your notes and that will take considerable time, perhaps several weeks. Get started on those revisions four to six weeks before the end of the academic term.

Thus, lectures will be a critical source of learning and your lecture notes will be the major medium for exam preparation. Be certain to warm up for each lecture by familiarising yourself with the concepts to be presented. Sit in the front rows to maximise hearing and viewing (and marks). Be well equipped to cope with the different types of note-taking. Revise the notes from previous lectures while waiting for the lecture to begin. Keep your mind alert by asking analytical questions. Revise your notes as soon as possible after the lecture and be prepared to go over them at least four to five times before your exams.

Practical exercises

1 Start a personal glossary of note-taking symbols and abbreviations. Put them into practice by using them as often as possible.
2 Exchange note-taking ideas with your classmates. Find out what symbols and abbreviations they use to help speed up their note-taking. Jot down their symbols so you can add them to your personal glossary.
3 As suggested in the previous chapter, practise taking notes during TV news broadcasts. The practice will increase your note-taking skill and speed.
4 Always strive to take notes in your academic meetings, including lectures, tutorials, seminars, laboratory sessions and even informal discussions with staff and other students.

5 If you want to take your note-taking to higher levels of achievement, enroll in a shorthand course, but realise your aim is to be selective in what you note. You do not want a record of every utterance of the lecturer.