MONASH ADVANCED SCIENCE & SCIENCE SCHOLARS SOCIETY

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MASS 3 Newsletter

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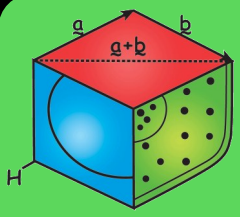

INSIDE THIS ISSUE:

SPECIAL EDITION!

Dishing the 'dirt' on Monash Science Units

Second and third-year agents have been working hard to get you this information. They climb under bushes (or sit on lecture theatre seats), pen and paper in hand in many of Monash's science units. They have not failed to impress, with an array of hints and observations that will hopefully help our younger agents make decisions for their later years in training.

Please take a look, even if you already know what units you will be taking next year, as they can give you some advice that you won't see in the unit outline. Thank-you so much to all of the wonderful people who contributed their reviews, this newsletter wouldn't be here otherwise.

To find the unit you are looking for, refer to the contents list on the left.

Some, ahem... interesting quotes

Speaking of secret agents, some sneaky (and unnamed) individuals have been collating an impressive collection of quotes form the past few weeks. Of course, they have been taken completely out of context to add to the humor:

"I find using my imagination just as hard as being creative"

"Actually depending on the size of the fire, you may want to run"

"Eating nerds was fun though…"

"I never win my mental battles with myself"

"It's not ethical to hit cats with hammers"

"The internet is a vast world, the majority of which i shall not explore voluntarily"

"I expect that before the semester is over, I'll have passively submitted to having all my organs harvested in future"

The thing you have all been waiting for...

SCIENCE SUBJECT REVIEWS!

After week of long waiting, the moment has come. It's insightful, it's exciting, it's the science subject reviews done by none other than your fellow mass^{3}ers.

With subject selections looming, it can be hard to decide what to choose for next year when you have limited units. Well thanks to some of our second and third-years, we have a collection of unit reviews that will hopefully give you a (totally objective) idea of what each unit is about.

Unfortunately, we are a little short on the physics and biology front. Additionally IT students may enjoy the beautifully brief reviews for comp science.

Maths

MTH1030 – Techniques for Modelling

This is a fairly standard Monash maths class. It covers the basics of a lot of the topics that will be introduced in later maths courses, but for someone wanting a brief introduction to a wide range of topics, it isn't too shabby. When I took this class it was taught by Leo Brewin and Richard Wardle. Leo still takes this class in first semester each year, and is a very approachable lecturer. Richard left to work at the Bureau of Meteorology, and was remembered as 'that lecturer who swore when he got mad'. With a reasonable amount of effort, this class should be well within the grasp of any student who has completed the prerequisite high school maths or MTH1020.

Maths

MTH2010 – Multivariable Calculus

This is the keystone subject for a mathematics major at any university, especially the later sections on vector calculus. The class has three components: partial differentiation, integration, and finally vector calculus. That also happens to be the ordering from easiest to hardest. This is a class that you don't want to fall behind on work for. The lecturers vary semester to semester, and a non exhaustive list would include Andrew Prentice (no longer teaching it), Simon Clarke, Steve Siems, and Simon Teague. This is certainly a first 'real' maths class, and the material covered is applicable to most other 2nd year, and many 3rd year, maths classes. Note that the material you are taught is more focused on methods that you will use in later classes, rather than being built on a firm calculus foundation, but it's all rather intuitive and you can ask any maths major to explain how to solve most problems you'll come across. On another note, I recall being told by a member of the school of maths 'If you want to be taken seriously as a mathematics student, make sure you read through Stewart's *Calculus*'. This is the text used at Monash, and it is also on the booklist at many prestigious universities around the world. Certainly a good reference.

MTH2021 – Linear Algebra

For most students taking this class, it will be their first encounter with pure mathematics. The class starts off, simply enough, with matrices and simultaneous equations. At about week 5, the focus changes to more abstract 'vector spaces'. The lectures aren't terribly exciting, but like 2010, this class has a lot of applications, so expect to meet a lot of double degree students from engineering and commerce. Most of your material in lecture will be learning the methods, while the tutorials will consist of applying these techniques to problems. This is certainly a 'proofier' subject, and this is most likely new to maths students. The lecturers were Chris Hough and Alan Pryde when I took the course, but now Tim Garoni takes the class, and sadly I can't tell you what his lecturing is like, but as I said, the material is rather… dry.

MTH2032 – Differential Equations

This class is very applied, and is probably the first class where a grasp of some physics will come in handy, though it isn't necessary. This class is a formal analysis of differential equations, which dives deeper into their properties than a physics or engineering class which requires students just to know how to solve them for particular cases. The class is split into 2 halves, a theory-intensive ODEs section, and an example-driven PDEs section. Alan Pryde used to teach ODEs, but now this is Jerome Droniou's domain. Rosemary has always taught PDEs. Don't buy her notes, she usually just uploads them onto Moodle (I'm in the process of getting a soft copy). In my experience, Jerome is very approachable, and holds regular office hours. I have also heard that he is very good for tutorials. Also in this class, you will be using Excel to plot some graphs. Just know that this method sucks compared to going out and acquainting yourself with MATLAB, but it's also something that comes up in MTH3011 (PDEs) , to my knowledge.

MTH2140/3140 – Real Analysis

The first analysis subject. This class is very proofy, and not for the faint of heart. The class focuses on seeming paradoxes regarding the real numbers, and how we can overcome them. When you enter this class, forget everything you thought you knew about the real numbers. An example is that "addition of an infinite amount of numbers is an operation is it's own right, it isn't JUST a lot of additions. So it has its own rules that may or may not agree with what you would expect". A tough subject if you don't get it, so you'll either love it or hate it. When I took this class, the only difference between the two was that there were 10 exam questions, and if you did 2140, you only had to answer 9 of them. If you don't need the 2nd year credit, do it as 3140.

Maths

Maths

Learning Survival Skills in MTH3011

Hey folks, it's your favorite bearded Physics/Applied Mathematics guy, here to talk about MTH3011 - Partial Differential Equations. Under the School of Mathematical Sciences, MTH3011 is classified as an applied mathematics subject and requires you to have completed MTH2010/2015 **AND** MTH2032 before enrolling in the unit. It is taught by Associate Professor Michael Page (the Pagesta!) who has been teaching the unit for almost a decade and, due to this experience, has boiled down the instruction of the course to a science.

One should look at MTH3011 as a logical extension to the 2nd half of MTH2032, with some higher calculus principles taken from MTH2010/2015. It develops on many of the PDEs seen, including the advection, heat and wave equations, and introduces a new equation: Laplace's/ Poisson's equation. So, forgetting EVERYTHING from MTH2032 IS NOT AN OPTION!

It also introduces, perhaps more formally if you haven't yet completed MTH2051/3051, the most powerful weapon in any applied mathematician's arsenal: numerical solutions. To begin with, you will primarily deal with solutions to ODEs, but Michael Page will build on these ideas to solve parabolic PDEs (i.e. the heat equation), elliptic PDEs (Laplace's equation), and the unsavory hyperbolic PDEs (i.e. the advection equation...you'll see why it's a pain in the ass to deal with these soon enough!).

So, you're probably asking, "What are your thoughts on this unit, James?". In my opinion, studying MTH3011 is a lot like waking up on a desert island with Bear Grylls; sure, it's a dangerous world out there, but with the very capable survival know-how of Mr. Grylls, you will find your way through the jungle. Though the mathematics may seem quite daunting to the uninitiated, Michael teaches the course very competently and cleanly hacks through the mathematical undergrowth with a finesse that I've seen few lecturers match. My only recommendation is that you, the reader, have some basic survival skills of your own; in particular, familiarity with MATLAB or Microsoft Excel as you will have to do a number of numerical computations of your own that are ASSESSED!

Overall, I highly recommend any mathematician (and even physicist!) to give this unit a crack, as it provides a very well-taught overview of PDEs and a great introduction to the world of numerical solutions. I give it 5 BEARDED APPLIED MATHEMATICIANS OUT OF 5!!!

MTH2121/3121 – Algebra and Number Theory I

Best described as a class where you'll learn clock arithmetic, where 2=14=26=etc… and how you can use this to find some interesting numbers and properties. When I took the class taught by Daniel Delbourgo, this class focused on the prime numbers, and a whole lot of funky manipulations of numbers and their divisors. Two weeks were dedicated to the Riemann Zeta function, as well as Bernoulli numbers. The algebra part is much cleaner and crisper, and is an introduction to group theory. The material is taught at quite a leisurely pace, and Daniel Horsley is a very conscientious lecturer. This class is only taught in semester 1, and has a continuation in semester 2…

Maths

MTH3150 – Algebra and Number Theory II

Better described as "a continuation of the algebra you learned in semester one, and some results from number theory that it comes in handy to prove". The class covers more structured sets than groups, called rings, and covers just about everything in between them and fields, which are the 'nicest' of numbers. The notes are all in the typed format you came to love from algebra in MTH3121, and you even get taught by Ian Wanless, their author. Daniel Horsley returns, as does Douglas Stones (I hear he takes 3121 now with Daniel). The lectures in this class are very different, it is much more of a discussion atmosphere, and questions from the audience often result in the lecturer giving more insight than might have been expected. There are even some practical demonstrations!

Maths

To sate your thirst for information about third-year math subjects, we have TWO reviews (yes two) for MTH3360. Enjoy the different opinions…

MTH3360 - Fluid Dynamics

One of Monash's more challenging undergraduate maths classes, you're going to need your wits about you and your prerequisite knowledge from MTH2010 and 2032. Weeks 1 and 2 are a vector calculus revision, and the tutorial in week 2 has a 5% test in it. Joining the class after this test usually winds up with you in Rosemary's office at 9am on a Friday doing the test then, so try not to do that. Some advanced material involving tensors is developed, and you see a derivation (somewhat handwavey) of the Navier Stokes equations, as well as the fundamental equations for fluid dynamics. That first half, taught by Rosemary, also has a section on sound waves. Louis Moresi, from Geosceinces, takes the second half and covers, specifically, incompressible fluids. He shows some videos from MIT in the 60's, and these are quite helpful to watch, as well as some of the little videos he posts. Victor Villabla makes an appearance as your tutor, and he is quite the fun character. Oh, again, don't buy Rosemary's notes, save yourself the $20 or whatever it is.

Losing Your Kidneys in MTH3360

Howdy guys and girls, it's your favorite bearded Physics/Applied Mathematics guy again, here to talk about MTH3360, which deals with the wonderful world of Fluid Dynamics. Through the School of Mathematical Sciences, it is classified as an applied mathematics subject and requires you to have completed MTH2010/2015 **AND** MTH2032 in order to enrol (as with most third year applied math units!). It is taken by two lecturers: Doctor Rosemary Mardling, whom you may remember from the second half of MTH2032 concerning partial differential equations, and Professor Louis Moresi from the School of Geology.

Now you may be wondering, "Whoa, hold up, James! What the heck does a geology guy know about fluids?!". Believe it or not, an incredible amount. He's one of the master-minds behind the geophysical fluid computational packages "Citcom", "Ellipsis" and "Underworld", which model fluid movement in the mantle of the Earth; he actually has an entire floor in Building 28 that works for him. Check this guy out, he has a Wikipedia page about him! (That's how you know he's a big-shot!)

Getting back to the unit at hand, MTH3360 is taught in two parts, with the first part, taken by Rosemary, dealing with the basics of fluids, such as the wave equation as well as the equations of motion for fluids, known as the Euler equation and the Navier-Stokes equation. The last part, taken by Louis, primarily deals with incompressible fluids and flows and how they lead to cool phenomenon such as vortex sheets and turbulence.

So, my thoughts on the unit? Studying MTH3360 is much like waking up in a bath-tub full of ice with one of your kidneys gone; you're confused and in pain for a long time. Whilst I find fluid dynamics an enjoyable subject, the unit could be taught better and more coherently. For example, in Rosemary's section, you're introduced to the idea of tensors for the primary purpose of deriving the Navier-Stokes equation and then...you never see it again in the entire unit! Tensors are a fundamental mathematical language and the quick crash-course you're given on it (and expected to be able to use fluently when deriving vector identities in a TEST) is incredibly choppy. Rosemary's notes are somewhat comprehensive, but I found myself having to refer to other sources to solidify some of the concepts that she presents (which I recommend you do as well!).

Speaking on Louis' part briefly, his notes are very well put together, but I find that, whilst I have the utmost respect for his intelligence and the weight of his research, he is not exactly the best lecturer I've ever had. He has the tendency to read his own lecture notes without adding any other perspective to his explanations, which is one of the seven deadly lecturing sins. Lastly, there was the inability to contact him; sure, I realize that he is a very busy man, but he should've at least responded to my email regarding a question I had on an assignment, as I was doing it a year ago. Even now, he still hasn't responded!

To sum it up, MTH3360 is an interesting unit, but does require some brushing up on the teaching front. I recommend talking to some of the cohort that did the subject in 2012 to see what they thought about it; the method of teaching could've changed since I did it in 2011! If you're considering studying MTH3360, I strongly suggest that you be fluid (pardon the pun) in vector calculus as you WILL HAVE A VECTOR CALCULUS TEST IN THE SECOND WEEK! Lastly, check out the films by the National Committee of Fluid Mechanics, as they provide very easy-to-understand explanations of many of the concepts that you see in this unit. Overall, I rate this unit 3.25 BEARDED APPLIED MATHEMATICIANS OUT OF 5!!!!

MTH3110 – Differential Geometry

One of the most pure-mathematical classes I've taken, this unit covers curves, surfaces and tries to put a whole lot of rigourous thought into exactly what curvature is, and how it can be measured. A good deal of linear algebra knowledge is expected, and it certainly doesn't hurt to have Real Analysis or Analysis and Topology under your belt by the time you take this class, if you plan on the pure maths major. Gilbert Weinstein takes the class, and frequently fills the 9 boards in S14. My biggest turn off for this subject is that the lectures don't get recorded, and if you miss one, you feel like you lost everything you ever knew. The material, while it sounds simple, is quite challenging, as one should expect of a 3rd year maths class.

ATM2020 – Climate Dynamics

This is a class that is a part of the Atmospheric Science major, but which can be counted for maths credit. This class, when taught by Deitmar Dommenget, covers the Globally Resolved Energy Balance model which has been the centre of much of his research. Basically what it, and this class, does is applies physics laws like the conservation of energy to the Earth, and uses numerical integration to model the climate of the Earth across time spans of weeks to months to years to millennia. The first half covers the nitty gritty of how his model works, and the main factors that contribute to climate phenomena, while the second half looks at the longer timescale evolution of the Earth. He assumes a familiarity of MATLAB, but it's not too demanding to learn it on the fly in this class. In fact, this class is where I gained my MATLAB proficiency. An interesting class, though you'll see the small class size dwindle to 3 or 4 by week 12.

MTH3060 – Advanced Ordinary Differential Equations

A continuation of MTH2032s ODEs section, the first half covers boundary value problems with Paul Cally. The assignment he gives is, well, incredibly difficult, but he also believes in the use of computer software to help you solve problems in the assignment. Just show your working. Simon Clarke takes the second half on dynamical systems, and sometimes the material seems confusing but you might actually know more than you think. His assignment is more accessible to those who enjoyed MTH3051, a prerequisite for the class, but is rather straightforward. At about week 9, bring in your coloured pencils, because you get to do some drawing! Don't be fooled though, with all the tute work as well, this subject can very well sneak up on you, and if you don't understand the material, it might just consume you.

Maths

MTH3230 – Time Series and Random Processes

I dropped this class after 2 weeks. There is a 2 hour lecture which I had a clash with, the lecturer was extremely difficult to hear, had a lot of technical difficulty, and I found that I was just teaching myself the material, poorly, without any reference to the lectures since they were inaudible. I would recommend avoiding this class as I did.

MTH3051 - Introduction to Computational Mathematics

As an engineer student, I've seen many science students struggling in their later years when they come to the sudden realisation that they are living in the 21st century where science is done with computers. I've personally seen Lex at the verge of tears in his attempts to code in MATLAB and Adam asking me how to do a simple 'for' loop. Even Ziggy has gotten confused with the syntax of function calls in the program. So, why are all these scholars struggling with such trivial tasks? The answer lies in the fact that they've had little to no programming experience and were throw into the deep end of the programming.

The science faculty does not require students to do any programming units they do not wish to do. However, in later years, some units will be requiring the use of programming, predominantly MATLAB, to assist with the teaching of their course material. These include, to my knowledge, most, if not all, third year physics unit and some third year maths units. Knowing how to code can mean the difference between a HD and a fail grade for those units.

MTH3051 introduces MATLAB to students and tries to teach students, who have not priorly done any FIT units, how to program. The unit itself is NOT a MATLAB unit, though it utilises the software and eases you into the use of it, rather than being thrown into the deep end to drown.

Leo Bruwin was the lecturer for this unit and I assume he will be for a while to go. He's a sufficiently good enough lecturer that learning will be relatively easy and he won't bore you to sleep. The labs are somewhat based on MATLAB, as most of the time the utilisation of it will make finding the answer a heck of a lot easier on yourself. In the few face-to-face encounters I've had with him, he has given off the impression of actually caring that you understand the course material and will try to explain things to you, with less than average amounts of belittling you that other lecturers may do. I've also heard, but can not 'officially' confirm that he recycles his exam questions and only writes up one or two new ones each year. If you could contact past students, you could easily get a taste of how the exam will be like. From experience, I can say that the multiple choice section an almost exact copy of what has been featured in previous year papers, a fact that he practically openly admits.

MTH3051 is an easy HD unit that would both boost your grade and introduce you to MATLAB. I would rate the unit 7 rainbow Nyan Cats out of 10.

Astro

ASP2011

Probably the only course where all the lecturers have the same name, ASP2011-Astronomy is an introduction to astronomical observations and the understanding of stars, galaxies and the universe.

The course is quite straightforward. There aren't many 'facts' you'll need to know offby heart, most of the unit is maths and whatnot. The maths isn't that hard; logarithims, Keplerian motion and physics of diffraction are the big players in this course. You will learn about celestial co-odinates, which are complicated, and is probably the hardest part of the course.

The labs are pretty damn difficult. You'll be spending all of the 3 hours looking at data and performing calculations using linux and software from the 90's. There is a lab manual for each week, so it's hard to get confused along the way. The content in the labs actually relates to what you're learning in lectures (I'm looking at you PHS1011). The troubling part is the assesment. You are expected to actually use your lab book as a lab book, writing down your method (including any problems you had along the way), observations and analysis/results. The marking is pretty harsh and it is a big jump from 1st year physics. You will have to write out two formalish lab reports during the semester, and man is that a bitch.

Nothing wrong with any of the lecturers, I thought they were all good. Online things (MULO/moodle) were kept neat and up to date.

I'd reccommend this especially to 1st years, because it is a course you can do and it isn't boring, unlike almost every other 1st year subject. Second years, feel free to do it. It's pretty easy and fun. Workload is not too bad.

ASP2062

Unlike ASP2011, ASP2062- Introduction to astrophysics is a prerequisite if you want a major in astrophysics. Monash is pretty much the only place where you can do an undergrad in astro, so it's worth considering it.

It's pretty much ASP2011, but with more things to remember. Who knew that dust clouds could be interesting (said no-one ever)? Seriously though, from dust to quasars, this course covers it all. All this is interrupted half way by 3 weeks of particle physics and probability, so it's a bit of a mixed bag.

Not much to say, sometimes you answer some questions, other times you run computer simulations straight out of the 90's. Really nothing difficult, and all the labs are out of 3, so it's pretty hard to do bad.

No notoriously bad lecturers, only one outstanding good lecturer; Andrew Prentice. Words can not describe how radically this crazy old man rocks the lecture theatre. Watch out for him mid semester. Saying that, moodle is not well set up; half of the notes are never uploaded and the whole thing is messy. Lectures are recorded.

ASP2062 is, I think, a prerequisite if you want to do an astrophysics major, but as a course I found it to be not very enjoyable. If you did ASP2011 (or maybe 1st year astro) the course should be pretty easy, but there is a lot to remember, and it has a quick pace. The workload is more than I'd like, but managable if you attend the lecturers.

Astro

ASP3051 – Relativity and Cosmology

This class is a more mathematical approach to Einstein's Relativity, and covers the topic in much more detail than in a first or second year physics class. The first half WAS taught by Tony Lun, now retired, who would cover aspects of Special Relativity, including resolution of the Pole-Barn and Twin Paradoxes. The second half is taught by Alina Donea, who covers some general relativity results, focussing on black holes, the space time structure around them and then some cosmology regarding the Big Bang, and how we can build a model for the early universe. This class is yet another offered outside the school of maths, but which counts for credit towards the applied major. It is conceptually quite difficult, and resources which explain the topics easily are hard to come by. I'm not sure who is replacing Tony next year, though I hear rumours Alina may take the whole class.

Chemistry

CHM2990/CHM3990

The Chemistry research projects are probably the most useful units that the school offers. They give you insight into the workings of a real research group, and lab skills that are not covered in regular units.

However, there are several things you should be prepared for when deciding whether to give it a shot:

- Everything still breaks. The equipment is more expensive than regular "teaching instruments" but you will still grind your teeth at user-unfriendly software interfaces, malfunctioning pumps and filthy glassware.

- One semester is not long enough to run a research project to completion. If something goes wrong halfway through (and it will), the delay could mean that you don't reach your target molecule, or don't get to record results in triplicate, whatever. Your supervisor will know this. I learned more about what it is to work as a research chemist than I did about coal and denitrification (my specific research topics), and I think this is the primary aim of the units.

- Most research groups are full of lovely people, more than willing to help you with your work. Some, however, are populated with the love-children of Dolores Umbridge and Vladimir Putin. Choose wisely! Ask former students from groups you're thinking of working with - getting along with your supervisor and lab-mates is probably the biggest factor deciding how much you enjoy the semester.

- If you can fit a second-year research project in, do it. It helps enormously with third year lab work.

- Remember you are an undergraduate: nobody expects you to become a world expert on your topic in 12 weeks. Feeling out of your depth is completely normal.

- Have fun!

Chemistry

CHM3960

Environmental Chemistry is the softest of the third-year chemistry units. There are very few difficult concepts or mathematical workings, just a lot of memorising. If you have a passion for the environment and/or agricultural land care, this is an excellent course. If your passion is more for easy assignments and unlimited prac report extensions, this unit will also suit you. I found the fieldwork and Perran Cook's lectures (water chem) the most interesting parts of the course, but there is one major downer: Alan Chaffee's lectures. If you ever thought you'd like to know a bit more about fossil fuel formation, or catalytic converters for truck exhaust, he will change your mind within minutes with his cunning mix of low, drawling speech and clumsy slides. You will need therapy to remove the visions of over-crowded graphs and unreadable text that will haunt your dreams for weeks afterwards. That said, I enjoyed the unit overall - the simplicity of the work more than compensated for the occasional poor lecturing.

CHM2911 – Synthetic Chemistry I

Along with CHM2922, this is one of the compulsory chemistry units for those wishing to complete a major in chemistry and it is probably one of chemistry's best units. It contains only organic and inorganic chemistry (none of those silly rate equations) and is run by some of Monash's best lecturers. Kellie Tuck and Andrea Robinson take the organic section and Leone Spiccia and another lecturer take inorganic (Peter Junk has left so I don't know who will take over next year). Don't worry if you don't remember those mechanisms from first year either, because Kellie is fantastic at baby-ing you through it. And Andrea is one of the best lecturers you will have, and far less intimidating than in first year. Overall the unit is not particularly hard as long as you keep up with the work, practice your mechanisms and definitely go to the tutorials! The lab component is fun, but goes for 4 hours. However, if you are pretty good at lab, there wont be many labs in which you will have to stay the full time. I definitely recommend this unit.

CHM2922 – Spectroscopy and analytical chemistry

Another of the compulsory chem units for a major, and another fantasticly run unit. Chemistry love to give second year students their best lecturers, and with one exception, CHM2922 follows this trend. This unit handles the analytical and physical sections of second year chemistry, although it is definitely focused on the analytical. It covers forensic chemistry, chromatography, spectroscopy, fluorescence and electrochem. Again, the lab component is 4 hours a week, but only a few pracs are long enough to take the full time. If you didn't do water chemistry, you will meet Mike Grace in this unit. Not only is he an all round great guy, he is a fantastic lecturer and the honours co-ordinator, so it's good to make his acquaintance early on. Toby Bell is also a lecturer in this unit, and is another great lecturer. The only bad lecturer you will come across in second year chem is Rosalie, who takes Mass Spec and electrochem. She is actually terrible, and you will probably learn more by doing her assignment and reading the notes than going to her lectures. Overall this unit isn't too hard either. The end of year exam is only 40% and the work during semester is not too hard (except for maybe the electrochem assignment but its only worth 3-4%). I would definitely recommend this unit.

GEN2041/GEN2052

These are the basic 2nd year genetics units. GEN2041 covers basic genetics, including inheritance and mapping. GEN2052 covers molecular techniques and population genetics.

Both have 2 one-hour lectures and a 3-hour lab each week. The lectures are generally quite interesting, and the lecturers go at a good pace. The content isn't too difficult, though occasionally there is some basic maths involved (though generally, Excel can do it all for you). The lab component can be a bit repetitive – most wet labs involve mixing some chemicals together and waiting or loading a gel and waiting, and then leaving the results to be analysed by the tech staff for the next week; and the dry labs just involve answering questions. However, the techniques involved are very beneficial if you want to major/work in genetics. (Also, a hint – you have to sign your name off every lab to show you were there.)

Biology

MOL2011/MOL2022

These are 2nd year molecular biology units, and are meant to complement study in biochemistry, genetics, and microbiology. As such, each semester is divided into the three sections mentioned, each run by members of the department involves. This means that there is a bit of overlap in the lecture content within the unit (i.e. in MOL2011 we covered translation 3 times), and between units (if you are doing BCH, GEN or MIC units you may find that some topics are repeated). Another issue is that each section has labs in a different area, so each 3-4 weeks you have to relocate from building 13 to building 55 to building 17.

However, these units are recommended for those studying biochem, genetics or micro, and while there is overlap, it also gives you a basis in the other units you may not be overtaking. The other benefit, is you can major in 'biochemistry/microbiology/genetics and molecular biology', which sounds a whole lot more impressive.

ESC2111/ESC2122

These are the basic 2nd year geoscience units. There is also ESC2132 (field geo) which isn't covered in this review. ESC2111 covers structural geology, sedimentation and palaeontology, and ESC2122 covers geochemistry, volcanology, environmental geoscience, hydrogeology and meteorites.

There are 3 hours of lectures and a 3-hour lab each week. The lectures give an overview of geo to help choose 3rd year subjects. Second semester has some maths and chemistry involved, so if you haven't done chemistry in ages, prepare to be confused. The topics are fairly interesting, though the palaeo lectures are interesting, but it's sometimes difficult to find out what is meant to be on the exam. The labs are once again in the geo building, so you have access to all of the hi-fi technology the labs off (i.e. smartboards). ESC2122 introduces microscopy, so a few labs involve staring at rocks through a microscope for 3 hours (luckily, they're colourful. Thanks, polarisation of light!)

The biggest issue is that the Department of Geosciences somehow thinks that a 2-hour lecture at 4-6pm is a good idea. Hopefully, it will be different next year, but watch out, in case. They are not fun. Especially when a lecturer 'forgets' to give you a break.

Geology

60 seconds of CompSci:

FIT1008 (Introduction to computer science): Technically a first year subject, but has two first-year prerequisites.

Was interesting in 2010 but it's now taught by someone else so who knows?

FIT2004 (Algorithms and data structures): You'll need to know the subject material, but it's taught somewhat shoddily.

It's core for a major though so you don't have a lot of choice.

FIT2014 (Theory of computation): Taught quite well, but most of the labs are in Prolog, which is a rather

irritating language. The Turing machines in the last labs are kinda cool though.

FIT3036 (Computer science project): Quality of unit depends a lot on who's running it.

FIT3139 (Computational science): Covers a wide range of computational techniques in little detail.

If you're not familiar with them this unit is interesting. If you are familiar with them the unit

is rather boring. Labs are interesting but rather variable in length.

FIT3140 (Advanced Programming): Interesting and can be challenging. This unit can rather easily turn into a LOT of work.

You'll be working with a partner so try to pick someone you get along with.

FIT3143 (Parallel computing): This unit is rather bizarre (a lot of trivia, schizophrenic difficulty, multiple-choice exam).

It's core for a major.

FIT3080 (Intelligent systems): It's kinda interesting. Apparently used to be better with the pre-

JOSH'S COMIC KORNER

Get all of the information you need from our resident comic-book expert,.

It's the end of the 2012 University year, and a perfect time to pick up some comic book series to entertain during the summer and educate before another explosive year of blockbuster films. So, let's get into it!

The Year Gone Past

It's been a pretty hectic year in comic books, especially with the Big Two (Marvel and DC comics).

In Marvel, The event "Avengers vs. X-Men" hit, ending a story that's been brewing for several years and turning Cyclops of the X-Men into a supervillain. Meanwhile, in the Ultimate Universe, an alternate universe Marvel has created where characters are 'modernised' and everything is ten times grittier, the alternate Peter Parked was killed off, being replaced by a young African American/Latino kid named Miles Morales. While both happenings were met with commercial success, Avengers vs. X-Men was more than a little derided by fans and critic alike.

DC Comics rebooted their entire universe late last year, and their restarted 52 titles have, on the whole, been selling better than they were beforehand. Though many changes are controversial (the unexplained absence of characters like Wally West and Stephanie Brown being foremost), there seems to be no end in sight in the current status quo.

The Year to Come

Between October 2012 and January 2013, Marvel Comics is beginning the renumbering of most of their titles, in that most series that they publish will be cancelled and a new series set to replace it. The "Marvel NOW!" initiative is set to be a great time to start picking up series such as "Superior Spider-Man", which will feature a new, currently unknown character replacing Peter Parker under the mask, and "Deadpool", which will feature the talkative and ugly mercenary with super-healing abilities fighting zombified US Presidents.

DC Comics have recently begun their second year of the "New 52" with a month of "#0 issues", primarily released to explain origins of many of their characters. Coming out of it are many new storylines, including "Rot World" in the acclaimed "Animal Man" and "Swamp Thing" series and the long-awaited "Death of the Family", featuring the return of the Joker after a year of… something, which will span nearly all of the Batman titles.

In the world of movies things are also heating up, with both Warner Brothers and Marvel Studios trying to set up the next phase of their plans. WB is bringing Superman back to the screen with "Man of Steel", ostensibly a test to see if audiences want a Justice League film, while Marvel is releasing "Iron Man 3" alongside a new TV show featuring SHIELD Agent Phil Coulson to begin the lead-up to a second Avengers film. We can also expect a new "Wolverine" film, a stand-alone sequel to the panned "X-Men Origins: Wolverine" which will feature the mutant Canadian fighting samurai in Japan.

Any queries, complaints, ideas, discussion material or advice for the editor?

Any content that you'd like to contribute to future newsletters? (the next will be published early semester one, 2013)

Send an email to: ljbee2@student.monash.edu