

## FOURTH YEAR MODULE CHOICE GUIDE

by Bradford Peyton (2007/08)

To help you make your module choices, I've included personal accounts by a number of past electrical engineering students. Good luck on your module choices and those meaty, end-of-year exams!

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- 2006/7 STUDENT #5 -----  
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Subject: EE4001 - Applied Power Electronics and Motion Control  
- Hayes's lecturing style doesn't suit me. Put another way: he's crap. He claims that 4 or 5 solid days study is enough to pass the exam. I can confirm that, but if you want to do well in it, that'll take a whole lot of work on your own steam.  
Continuous Assessment: 2 Quizzes

Subject: EE4002 - Control Engineering  
- This takes 3rd year a step further and delves into more advanced control methods. I find Lightbody a very helpful and approachable lecturer but the exams can be very tricky. Certainly not for anyone who found control difficult last year, as it only gets harder.  
Continuous Assessment: 1 Assignment

Subject: EE4007 - Optical Electronics  
- Interesting subject. The first half is old school Laser theory and the second consists of more modern approaches. Dr. Prunty and Dr. Morrison take half the course each and the exam consists of two halves of 4 questions, do 5, 3 from one section, 2 from the other. I recommend covering every inch of Morrison's material (because leaving any out is risky) and pick your remaining Prunty questions wisely.

Subject: EE4009 - Mechatronics and Industrial Automation  
- Robotics, motion control and programmable logic controllers (PLCs are very intuitive). If you don't mind messing around with coordinates, frames and matrices this is worth doing. I can't stress enough what a lovely guy Kavanagh is, but he does tend to get flustered in lectures and dance endlessly around the point. Not what I'd call a predictable exam, but each section gets pretty much its own question, so it's possible to pick and choose. His examples are pretty decent and the material is interesting.

Subject: EE4012 - Medical Electronic Systems  
- X-rays, MRI scanners, electrical muscle stimulation, physiology, circuit analysis, dsp, et cetera. Large course with many different lecturers. What it lacks in complexity it makes up for in sheer volume. Certainly one of the more interesting subjects but there's a lot of memory work.

Subject: ME4001 - Engineering Management  
- As someone whose business knowledge ended at Junior cert level, I found this subject difficult. It isn't made any easier by Almeida's lecturing style and handwriting. Don't underestimate the exam. On the plus side, he used pre-written overheads this year - same handwriting but at least he isn't scribbling in a hurry.

Subject: ME4002 - Production Engineering  
- This choice worked out well in the end. I was worried about going for a course with Bill Wright, but whether it's the material or his attitude, things went much smoother than Mech in 2nd year. Don't let the first couple of lectures revising chemistry put you off, but there is quite a lot of material to cover. Practice in answering exam questions is vital. The exam this year was manageable, but the second half of the course is slightly waffly. As a result full marks in those questions are harder to attain than in the first half, which is more computational.

Subject: UE4001 - Digital IC Design  
- Interesting subject. Begins with a look at transistor technologies, then achieving digital logic using CMOS, pass-gates, etc. (in other words first year Digital Systems in more detail). The exam is largely the same every year. Practice with exam questions but be sure to cover all the notes.

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- 2006/7 STUDENT #4 -----  
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Here are my module choices from 2006/07:

EE4001 John Hayes' Power

- In my opinion, he's a terrible lecturer, but his exams are fairly predictable. If you work well with your fellow classmates at solving the problem sheet he gives at the end of the year, this will be straight forward.

EE4004 Telecommunications

- This course is full of difficult material to get your head around, but if you put in the effort, Colin's 4Q domination on the exam shouldn't prove too scary. (P. Murphy & K. McCarthy each have 1.5Q)

EE4007 Optical Electronics

- Prunty and Morrison team up for a fair course in lasers and LEDs. It's a lot of information to know, but given 4-5 days before the final exam, it's do-able. Most of the class took this because Prunty was teaching it and he's a legend to us.

EE4009 Mechatronics

- Kavanagh has an ironically robotic presentation style in this course, often confusing himself more than the class with his attempts to describe motion control. He's great at "Overcomplicating the simple." The notes are good but I found his teaching style far too confusing to gain a lot from the lectures.

EE4010 Mick Egan's Power

- An excellent lecturer who hands out a tome of notes which are near impossible to completely read, let alone understand. He falls down in expecting you to write while listening to an explanation at the same time. This one's a marathon. His exams are fair and he marks fairer than most.

EE4012 Medical Electronics

- I had personal experience in hospital work so I found this one particularly 'fun' and gained a lot of useful information in the course. However, it is a big course and prediction is difficult with so many lecturers. You just study what you can and hope it comes up for this mega-course. Kept relatively technically simple by EEng standards.

ME4001 Engineering Management

- I like Almeida's style, albeit reading his writing and hearing what he is saying is difficult. Anyone with a business mentality will enjoy this course. Any Leaving Certificate business course would do well to prepare you for this course. Relatively easy calculations and "common sense" course material. Good to pick up marks.

ME4002 Design For Manufacture

- Many people loathe Bill Wright as a lecturer but I think he's one of the best that EEng has. If you can get over Bill's need to cram too much info into every lecture and you tackle this one hands on as I did, you should gain a lot of tangible knowledge that is at the backbone of the engineering world. I highly recommend taking this.

The ones I didn't take and why:

EE4002 Control Eng

- It's control engineering. I found the 3rd year course mind boggling albeit interesting and I knew that this had a similar design exercise, so I stayed far away from this. An easy drop.

EE4008 DSP

- Marnane plus complex maths and the F-word ... yes, Fourier! No way. Add an assignment and you're half way to the freak show. Most people avoided this.

EE4011 RF

- Personally, I don't like Kevin McCarthy's teaching style but most people think the opposite. It was either Telecomms (EE4004) or this for me, and I chose EE4004 because there was no assignment and I wanted to concentrate my efforts on the final year project.

UE4001 Digital IC

- This is meant to be a cakewalk, but I can't stand Micro, so I stayed away from it. If you're good at Micro, I'd say taking this would be a good idea.

UE4010 Microelectronics

- I've heard it's similar to Kennedy's class in 3rd year, where you'll understand everything in class and then look at the exam and see nothing that resembles what you've learned. It's micro. Another easy drop for me.

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- 2005/6 STUDENT #3 -----  
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Hi STUDENT #4,

If you can get in contact with STUDENT-X I sent her on a large email during the summer, not sure if she still has it or not though. I can send it on to you in a few days as well, by the weekend, coz its in my gmail account and can't get it from work!

In the meantime, briefly here's what I did:

Optoelectronics  
Management -> Do this!!  
Production  
Digital I.C.  
Power Systems  
Power Electronics -> Do this!! (Easy exam)  
Medical  
Mechatronics -> do this!!

Avoid Control (unless you like it and are very good at it.)  
Avoid DSP (once again unless you really like it, its got continuous assessments which will take away from project time, as will Control)  
Telecomms is a possibility, the exam was meant to be fine last year, but it has 3 lecturers I think, and one of them is Paddy Murphy. Enough said.  
Heard that Microelectronics wasnt too easy.

If you can hang until w/end I can send on the full detailed description of each! Let me know if STUDENT-X sends it on to you.

Best of luck STUDENT #4,

STUDENT #3

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Hi STUDENT-X,

No problem at all! I'd love to help someone else get through the hell that is Electrical Engineering :)

I'll give you the sentence run-down on each, if you want any more help please gimme a shout, its no hassle at all!  
The subjects I did are all in bold.

**\*EE4001 Applied Power Electronics and Motion Control**  
Do this as well. Johnny Power is the laziest man alive, gives you continuous assessment tests 3 times during year, you get best two results and counts for twenty percent. In the bag! Only short questions in continuous assessment, and they're grand. Exam isnt the worst and you only have to do 4 out of 6 I think which is a nice choice. He gives you a study guide, if you can do the study guide you'll do very well! He's too lazy to make the test hard.....

**\*EE4002 Control Engineering**  
Heard it wasnt as bad as Control in third year, but apparently theres a lot of understanding and notes to this one, plus projects etc, so I steered clear. I heard it was do-able but not a dawdle.

**\*EE4004 Telecommunications**  
In previous years, people were saying awful things about this one, 4 different lecturers and loads of stuff to know. This year was a surprise in that the exam was apparently really easy, so this one's a bit of a gamble.

\*EE4007 Optical Electronics

Alan Morrison and Sean Prunty do this one. The notes are understandable and really well laid out for Morrison's section, Prunty's keep repeating all year long. Thought I was grand for this one until I realised that I knew practically none of Prunty's stuff after studying all of the other subjects during the month off..... which was bad!! I stayed up until 2 the night of the exam, and woke up at 5, absolute panic!! AS expected I bombed prunty's but had concentrated on Morrison's so it was ok in the end. Previous years were much simpler than ours, so it was annoying to see a hard exam. People did badly so might be easier for your year.

\*EE4008 Digital Signal Processing

Heard this was ok, but had assignments so I steered clear. Liked DSP in 3rd year, but my mentality for the year was to avoid anything with assignments to give the project as much time as possible. Don't really like Marnane anyway so didnt do this one ;p

\*EE4009 Mechatronics and Industrial Automation

Do this. Enough said. Looks really hard when doing it but very easy to study if you put in the time, exam was grand and its pretty predictable. Its worth doing just to see Kavanagh waving his arms around pretending to be a robot.!!! lol :)

\*EE4010 Electrical & Electronic Power Supply Systems

This one is practically the same as Power in 3rd year. Loads and loads of notes but you can cut it down a bit when studying for the exams. Same stuff comes up all the time and Egan is a nice guy, he doesn't want people to do badly. Our exam was pretty fine. I recommend this one.

\*EE4011 RF IC Design

Mixed reviews on this one. Heard it wasnt easy because you had to learn a lot of awkward proofs, and also get an assignment close to the end of the year which is a disaster for studying.

\*EE4012 Medical Electronic Systems

Biggest amount of notes ever!! Loads of Biology stuff but exam question is ok. Bill Wright's section is a bit like Production and is ok. Marnane's section is a bit weird, avoided it really. Kevin McCarthy has 2 questions on it, which are ok, but his notes are awful, he just robs them from a book and hands out loads of massive photocopied chapters. Gordon Lightbody's sections totally fine, overall a good subject despite the size of it.

\*ME4001 Engineering Management

Did this cause heard it was easy. Is really easy, good bit of material but easy to study. He gives worked out exam papers towards the end, learn them all and it should be ok. Our exam was a little trickier than previous, but still a good subject for picking up marks. WARNING: REALLY BORING!! But still good for marks.

\*ME4002 Production Engineering

I dislike Bill Wright. His notes are clear, but he was a b\*\*\*ox in the exam marking. I thought I go 75+ in exam and came out with 58%, he really does mark ridiculously hard. BUT saying that, its not the worst subject and overlaps a bit with Medical in the Ultrasound and MRI sections so its handy that way. Not a bad subject overall.

\*UE4001 Analogue IC Design

Its actually called Digital IC design. Ok, first lecture was like, oh no, more 3rd year Micro, but it actually is a grand subject. I was no hot shot at transistors, Sverre Lidholm is good and clear at teaching the stuff. BUT, even though I could do 100% of all the past exam papers, he threw a spanner in the works and it became the worst exam ever! Still did fine because everyone did so badly, but I'd reckon it will be more like the previous years which were super easy due to the uproar caused by tour exam. Overall I recommend this subject though, just hopefully the paper wont be like our year!

\*UE4010 Microelectronics

Don't really know a lot about this one, didnt hear it was too hard.

To summarize, because the project is worth three times the amount of any other subject, its really the project mark that will decide your degree mark. My advice is to spend as much time as possible on the project, and to avoid any subject with too many assignments, especially towards the end of the year.

Pick a good project and you're away on a hack. We had Morrison and did a Golf Swing Analyser with cameras, and it worked a treat. If you impress the supervisor and come up with something yourselves without being prompted to do their idea every week, they'll reward you with 70+%. That really sets up the rest of your subjects.

As for studying, seriously for the sake of the exams, start as early as possible! You can't take back the year, so that as my mentality. I worked with another of my friends, he lived close by, and if there's anyone you could do that with I recommend it. Some people can't work in groups but I find it great for something as hard as Elec Eng. Having someone else there motivates you to keep going even when you want to stop, and its good for your sanity! Give it a go if you can.

I started studying day 1 and did about an hour and a half about 3-4 nights a week casually to get me used to it. It REALLY helps because you don't want the month off to be the first time you're seeing something, and freaking out!  
Get a good project partner, and make sure you give a lot of time to the project. A lot of our class seemed to overlook it in the start of the year and freak out towards the end. The key to ours was that practically the whole bones of it were done by the end of the Christmas holidays and all we had to do was slog it out til the end.

Some people study during the Christmas holidays, which isnt a bad idea, but we decided to give the days to the project which was the best idea ever because having a lot of dyas of it in a row really got it up and running in a great way. You've enough time for studying during the year, so try to do some project at Christmas.

Not sure if you like programming, but if you do try to pick a project based on it. Its really good for getting resources off the net, and there's no messing and queueing for the soldering iron etc. I HATE trying to build things on breadboards, not sure about yourself! Programming is much safer, you can make backups etc and its a useful skill to have as far as Citigroup are concerned if you'd like to go back.

Ok, my fingers are burning hot after all that typing, I'm gonna take a rest :) If you have ANY questions, please gimme a shout, I'm delighted to help!

Kind Regards,

STUDENT #3

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- 2004/5 STUDENT #2 -----  
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Hey STUDENT #3!  
K i know we chatted bout this before so sorry if I'm repeating myself...  
sometimes it can also be a matter of opinion or what subject suits you so this is very much just a rough guideline...

What I would pick as a definite top 6 (in no particular order)are the following:

Analogue IC (didnt do it myself but really should have, it's really easy)

Eng Management

Power Electronics&motion control (J hayes)

Mechatronics (lectures can be painful with kavannagh but the exam was in my opinion one of the easiest exams)

Opto (it's said that this subject is hard but I honestly don't think so, think it just has a bad reputation! it was my highest mark as well so the exam wasn't anything taxing...to give you an idea -Prunty's section is a lot of maths problems and theorems and morrison's is more definitions/theory and simple maths)

on another note about both mechatronics and opto, the reason I liked them is when you're studying them and you finish a section you totally know if you have it covered or not as in you can usually do all the previous exam qs. not a bother which is reassuring yknow. there's nothing worse than studying stuff then looking at the exam qs and thinking sh\*t!

Medical I know we were the first year so it's said they went easy on us but this is good subject coz it's a break from the norm. There's 7 qs. first one is pure biology which is actually totally easy to learn (but u do need to know all of it), then the 7th qs is a control (you don't have to know anything about control though, trust me!) essay question which you'll know going into the exam. so that's guaranteed 2 questions already. rest then is up to you really, kevin mcCarthy has 2 questions and they're alright but sifting

through his notes is a bit of nightmare, he gave us sample questions so just make sure u have solutions to them, then there's DSP stuff which I didn't do, so I did the Bill Wright stuff which was grand, good bit of learning in his section too but like I said it's a change from all the maths etc so I liked studying it. (okay maybe 'like's a bit strong...)

right, they're my top 6 and I'll just let u know my opinion on rest:

Egan's Power - I did this and it wasn't too bad coz I had 3 full days at end to study for it but it's actually quite a difficult subject. A lot of people in our year did it I think coz it was Egan and also 3rd yr power was grand, but this subject is actually quite tricky. If you do the work though then it's okay, it would really depend on your exam timetable, I wouldve been screwed if I didn't have the free days before the exam like.

Telecomms - I did this as well and thought twas grand...that is til the exam. Colin Murphy was totally horrible to us. Besides that, there's actually a sh\*tload to kev mccarthys section as well so I really don't know if I'd recommend this subject at all. That said, yer bound to get an easier ride coz our paper was so horrific.

Production - This was my 8th subject and I thought it was grand, again its a break from normal mathsy type subjects but there is a Lot of learning in it, but its not too tough going. You just have to put in the time. I'm not sure if yer timetable will be the same but in my first week I had mechatronics, production and eng mgt and that was kinda good I think coz you're least tired the first week and by the end of it I was nearly half way through the exams. So that was another adv but I don't know if ye'll get same timetable.

Control - didn't do it and wouldn't do it in a fit.

DSP - didn't do it, mainly coz there's an assignment and last thing you want is an extra assignment. One adv is that it overlaps with one of the medical qs so that would help.

RF IC - Again, there's an assignment with this so I stayed well clear, especially coz it was at end of year, nightmare.

Micorelectronics - I'm allergic to micro stuff so didn't go near this, I really don't know much about it either, twas mainly the micro people who did it.

Hope that helps...didn't mean to babble on for so long,

ps...its spelled STUDENT #1 by the way so I forwarded the email on to him for you.

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- 2004/5 STUDENT #1 -----  
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Hey,

STUDENT #2 sent on the email to me, my address is actually STUDENT.#1@citigroup.com

Now about the subjects:

Applied Power Electronics & Motion Control:

This is the usual Johnny Power course, it seems like your lost during the year but the exam comes off one of his study guides at the end of the year. I did it last year and was one of my best subjects. I bought the book but wouldn't really advise it, it's not that good but then again the notes he gives are fairly useless - if it wasn't for the study guide it would have been a disaster.

Control:

I avoided this like the plague after 3rd year, but it's not meant to be as bad in 4th year but still !! In saying that a good few people kept it up and got on grand but I think they had to put in a hell of a lot of work (or so they said).

Telecoms:

I did it and regret it to this day! I'd avoid doing this unless you really love Colin Murphy type exams. Even at that the Colin Murphy stuff isn't too bad but then you have to learn off a huge but easy handout from Kevin Mac, you could be really lucky and have your question come up and do it in 2min or else just blank on it. Then there's the Paddy Murphy section which most people in my year avoided - it was too long for just 1.5 questions and the notes weren't good enough to do the question. That leaves you having

to do 4 Colin Murphy Qs and 1 Kevin Mac, with the other 2 questions not fully do able. Basically I hated it but once again some people did well.

Opto:

I did this subject and while doing it wasn't too sure about it, but it turned out to be a good subject to do. Prunty's section of the course is all deriving stuff but once you get it it's fine. It can be totally hit or miss with Morrison's stuff, he seems to have a lot of unnecessary stuff in his notes - he gave us a lovely section 2 in our exam but looking at previous years this can be hit or miss - I think we got lucky.

DSP:

I did this and thought it was okay, but it needed a lot more work than some other subjects. Most people complained a lot about this one but my project was in this area so I had done some work in it already.

Mech:

I did this as well and would recommend it. It's the usual Richie Kav lecture - not great explanations but plenty of notes and an okay exam.

Elec & Electronic Power Systems:

I also did this. It's fine if you don't mind Mick Egan power - loads of notes again but an okay exam.

RF IC Design:

I didn't do this and don't really know much about it to be honest - I never heard it was piss easy anyway.

Med Eng:

I went for this one and thought it was fine, but we were the 1st year of it. Most of the lectures gave lists of sample questions that the exam came from. There can be overlap in this and some of the other subjects so I'd advise doing it.

Eng Mgt:

I did this and it was fine (hind sight is great). There's loads of previous years exam solutions floating about that are good when it comes to exam time.

Prod Eng:

Didn't do this - seemed like a lot of learning in it but might not be too technically difficult. Can't really comment though.

Analogue IC:

I didn't do this but if it's the Sven course I'd definitely recommend it. All I heard for the year was that it was piss and people didn't have to do much work in it!

Micro:

I didn't do this either and I don't know much about it. I avoided it after 3rd year but heard from a few people during the year that it was okay.

That's my 2 cents on the subjects. It all depends on what you like the most though.

Regards,  
Student #1

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