DEPARTMENT OF CHEMISTRY AND BIOMOLECULAR SCIENCES

UNIT OUTLINE - GUIDE, SYLLABUS AND TIMETABLE

CBMS103 – ORGANIC AND BIOLOGICAL CHEMISTRY

THREE (3) CREDIT POINTS

SEMESTER 2, 2013, D2 (internal mode)

UNIT CONVENER – A/PROF JOANNE JAMIE

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PREREQUISITE CBMS101 (P) OR HSC CHEMISTRY BAND 4

URL ilearn.mq.edu.au

(login and follow prompts to CBMS103 Organic and Biological Chemistry)
Welcome to CBMS103 - Organic and Biological Chemistry. CBMS103 presents the fundamentals of organic chemistry, which is the study of chemical compounds containing carbon. Such compounds are the major components of living systems. The unit is therefore particularly suitable for students who wish to major in chemistry or biomolecular sciences, as well as those pursuing related disciplines in biological, environmental, medical and health sciences. The mechanistic themes presented are relevant to molecular transformations in both the living world and in the laboratory. The coursework encompasses a systematic study of the structures and typical reactions of the major classes of functional groups (alkanes, alkenes, aromatic compounds, alkyl halides, alcohols, aldehydes and ketones, carboxylic acids, amines). This includes the basic chemical properties of important biomolecules such as amino acids, carbohydrates and nucleic acids.

CBMS103 assumes a good mastery of the concepts of bonding, stoichiometry, equilibria, oxidation/reduction and acid/base behaviour at the level of HSC Chemistry. These basic concepts will be used and built upon during the whole unit.

TEACHING STAFF

- **A/Prof Joanne Jamie** Unit Convenor, Lecturer and Tutor, F7B 231, ph 9850 8283, email joanne.jamie@mq.edu.au
- **A/Prof Bridget Mabbutt**, Lecturer and Tutor, F7B 338, ph 9850 8282, email bridget.mabbutt@mq.edu.au
- **A/Prof Andrew Try**, Lecturer and Tutor, F7B 228, ph 9850 8291, email andrew.try@mq.edu.au
- **Dr Fei Liu** Tutor, F7B 330, ph 9850 8312, email fei.liu@mq.edu.au
- **Mrs Maree Nelson** Tutor, F7B 333, ph 9850 8295, email maree.nelson@mq.edu.au
A/Prof Joanne Jamie is the coordinator of this unit and should be consulted if you have administrative or organisational problems.

A/Prof Jamie will be presenting lectures on structure and bonding, acids and bases, alkanes and cycloalkanes, stereochemistry, reaction mechanisms, alkenes, alkynes, aromatic compounds, alkyl halides, alcohols, phenols, ethers, aldehydes and ketones. A/Prof Try will also assist with some lecture topics during some stages A/Prof Jamie is away. A/Prof Mabbutt will present the lectures on carboxylic acids and derivatives, amines and the biomolecules carbohydrates, amino acids, peptides and nucleic acids. Along with these academic staff, Maree Nelson and Fei Liu will be involved in tutorial classes.

The staff have an open door policy for any questions best dealt in person on their topics. However, it is best to organise an appointment first by phoning or emailing beforehand. A/Prof Jamie will have a timetable on her door to assist in identifying the most convenient consultation times. Where possible, however, you are encouraged to ask a question by email – put CBMS103 in the header of the email message.

**REQUIRED AND RECOMMENDED TEXTS AND/OR MATERIALS**

*Prescribed Texts and Materials:*
- D. P. Weeks, “Pushing Electrons”, 3rd Edition
- Molecular Modelling Kit
  (The above are a bundled package at the Co-op bookshop. Upon request they may also be sold separately)

- CBMS103 Laboratory Manual (available from Co-op bookshop and downloadable from the unit web site)
- CBMS103 lecture notes can be obtained from the unit web site. Notes for the first lecture will be provided in the first lecture.

*Further reading material is also available in the library:*
- M. J. Winter, “Chemical Bonding” (Oxford Chemistry Primer No. 15)
CLASSES

- **Timetable:** Please check www.timetables@mq.edu.au for the official timetable of the unit.
- **Lectures:** Monday 11.05–11.55am W2.4A Macquarie Theatre; Thursday 1.05–1.55pm W6D Lotus Theatre; Friday 12.05–12.55pm Lotus Theatre.
- The lecture notes for the first lecture in week 1 will be provided. **ALL SUBSEQUENT LECTURE MATERIAL WILL BE EXPECTED TO BE DOWNLOADED FROM THE WEB SITE at ilearn.mq.edu.au.** Lecture recordings and video capture links (under echo) are also found at the unit website. Lectures will be used to emphasise key points and concepts with relevant examples. **Studying the material to be covered BEFORE coming to a lecture will strongly help you get the most out of the lectures.**
- **Tutorials:** These are compulsory, with one class every week, commencing from week 2. During tutorial time the problems assigned (see tutorial list at the end of this document) will be discussed. These problems closely resemble the types of problems in exams and are designed to help you gauge how much command you have on the materials covered. **You MUST work on these problems on your own before the tutorial so as to fully take advantage of this exercise and should bring in the textbooks, lecture notes and accompanying resources such as the model kit to assist the session.**
- **Laboratory classes:** The laboratory classes for CBMS103 run from **weeks 2-13** in E7B308 and E7B320. These are **compulsory.** You will be allocated ONE laboratory class **every 2nd week.** This will be based on the details provided during your enrolment. Laboratory classes will begin in **week 2** for students allocated **Group A** laboratory classes and **week 3** for students allocated **Group B** laboratory classes. **Please refer to the laboratory manual for further details.**
- Your allocated laboratory day and group (A or B) and tutorial time will be available on the unit web page. During week 1 you can email A/Prof Joanne Jamie (joanne.jamie@mq.edu.au) if your allocation is in conflict with other **academic** timetables or commitments that are beyond your control. In your email you must include the following information: your name; **student number;** phone number; email address; the reason why the assigned laboratory and/or tutorial day/time is not appropriate for you; and possible alternative allocation(s). A/Prof Jamie will reallocate you as appropriate.

UNIT WEB PAGE

The web page for this unit can be found at ilearn.mq.edu.au. Just login and follow the prompts to CBMS103 (external). You can use any web browser such as Firefox, Internet Explorer or Safari to login.

**iLearn** is the name for Macquarie University’s new Learning Management System (LMS). The iLearn online learning environment enables learning, teaching, communication and collaboration. It is used to make lecture notes, laboratory notes, discussion forums, digital lecture recordings and other learning resources available to students online. See [http://www.mq.edu.au/iLearn/](http://www.mq.edu.au/iLearn/) for more information.

You will be asked for a username and password. Your User Name is your Macquarie Student ID Number, which is an 8-digit number found on your Campus Card. The password is your myMQ Student Portal password. This will be the original MQID password (2 random characters followed by your date of birth in ddmmyy format) that was sent to you on enrolment, unless you have already changed your password in the myMQ Student Portal. **If you have any problems with iLearn log a ticket with OneHelp at onehelp.mq.edu.au.** More information about OneHelp can be found at [http://informatics.mq.edu.au/help/](http://informatics.mq.edu.au/help/).
You are expected to access the unit web site frequently. This contains important information including notes on ALL the topics to be covered; What You Need to Know Sheets; your marks for practicals, quizzes and mid-session exam; and past exam papers, including with answers. Additionally, the web site will also be used to post important messages and links to internet facilities and sites of relevance to the course, downloadable software, and lots of other interesting material.

**TECHNOLOGY USED**

You are expected to access the unit web site on a frequent basis and download pdf files. If you do not have your own computer you may wish to access the CBMS103 web resources on campus using the PC computers in the Library or in the C5C computer laboratories.

- To view notes on all the topics and past exams on the unit web site, you will require Adobe Acrobat Reader Version 9 or later to be installed on your computer. Acrobat Reader can be downloaded from the Adobe web site http://get.adobe.com/uk/reader/. If you are using the computers in the library, then Acrobat has already been installed.
- Please note information will also be sent by email to your student email account so please look at your email account on a frequent basis.

You will also be required to use an Online Web Learning (OWL) System for assessment tasks and practice problems. This requires software that is freely downloaded, but is also available for you to use on the library PCs and those in the C5C computer laboratories. Further details on this will be provided on the first day of the first on-campus session.

**EXPECTED LEARNING OUTCOMES**

By the conclusion of this unit, students should be able to:

- Identify and understand the key structural and bonding characteristics of organic molecules
- Recognise and name key functional groups of organic compounds
- Recognise and identify stereochemistry and conformational properties of organic molecules
- Correlate the structural and bonding features of key functional groups with their reactivity
- Write the mechanisms of key chemical reactions and predict their stereochemical outcome
- Recognise reactions suitable for synthesising and interconverting functional groups
- Name reagents given starting materials and products
- Name and draw the structures of starting materials given reagents and products
- Predict and name the structure of a product(s) given starting materials and reagents
- Propose a short synthetic sequence using key reactions to achieve the synthesis of a target molecule
- Identify major biomolecules and understand their functional group chemistry
- Explain organic and biological concepts clearly in the tutorial class to colleagues and the tutor and in written format in exams and laboratory reports
- Undertake basic laboratory procedures for isolating, synthesising and identifying organic compounds or functional groups, using chemistry specific apparatus and techniques and safe laboratory practices
- Work with colleagues to undertake experiments in a safe and harmonious way
• Accurately record your laboratory observations in an appropriate scientific manner
• Analyse experimental results to solve related problems
• Have a deep understanding of organic and biological chemistry concepts and be able to apply those to new problems.

In addition to the discipline-based learning outcomes above, this unit will also help develop the graduate capabilities. These are the building blocks for developing the attributes valued in a university graduate. Some of the attributes and skills that CBMS103 can help you develop are:

• **Basic skills of time management and organisation:** The laboratory classes require considerable preparation prior to the class and good time management within the class to conduct the experiments in a satisfactory fashion within the 4 hour timeframe. On-going assessment, especially the laboratory assessment and laboratory and in-class/on-line quizzes, and the preparation for the tutorial classes, also ensure that you will need to be working on CBMS103 consistently throughout the semester to perform satisfactorily in the unit.

• **Effective communication and interpersonal skills:** CBMS103 will help equip you with both oral and written communication skills, through especially laboratory reports and communications you will be engaged in within your tutori al and laboratory classes. You will also be working in small-medium size groups as part of tutorial and laboratory classes, with people from a variety of cultural, social and economic backgrounds, giving you the opportunity to develop your ability to work and communicate with others.

• **Problem solving and research capability, critical, analytical and integrative thinking:** Within this unit you will have the opportunity to develop your problem solving and research skills through laboratory classes and the associated reports, tutorial sessions and working through exam tasks. The problem solving will include situations where there are clear solutions as well as situations demanding critical, analytical and integrative thinking.

• **Ethical practice:** Scientific honesty is important and you will practice this within this unit through especially the laboratory work where you will need to record observations and report on results in an accurate and truthful manner.

**Teaching and Learning Strategy**

CBMS103 is a 3 credit point half year unit and will require an average of 9 hours of work per week (contact hours plus self study time). For students with weak chemistry backgrounds, more time than the 9 hours per week will probably be necessary to perform satisfactorily in this unit.

CBMS103 consists of 3 hours of lectures and a 1 hour tutorial every week (except week 1) and a 4 hour laboratory class every 2nd week. CBMS103 is designed to allow you to develop an understanding of organic and biological chemistry and the practical skills to undertake simple organic chemistry experiments in an efficient and safe manner. The lecture material, tutorials and laboratories complement each other, and along with quizzes (in lectures and on-line), have been developed to increase your understanding of the topics so you can achieve the learning outcomes.

The unit expectation is that you will:

• Attend all lectures or when not possible listen to the recorded lectures
• Attend all tutorials and attempt the set exercises
• Demonstrate reasonable competence in all laboratory preparation exercises and attend each laboratory class
• Demonstrate reasonable competence in the post-laboratory exercises submitted by the due dates
• Perform satisfactorily in the laboratory and coursework assessment tasks
• Spend an average of no less than 3 hours per week of private study in addition to class contact.

If you prepare and attend all components of the unit and work consistently and continuously throughout the semester, you should be able to develop a strong understanding of the chemistry of organic compounds, including of biological significance, and perform satisfactorily in this unit. A clear correlation has been seen between student attendance and satisfactory completion of this subject. Students who try to memorise just before exams typically do not do well in this unit. Instead a deeper understanding of the concepts is required.

• Lectures will be presented formally, although quizzes and general questions may be asked in class, demonstrations provided, and examples of problems worked through, to strengthen and increase understanding of the concepts. Most lecture material will be available on the unit website, while other material will be provided in the lecture class. You are expected to download the lecture notes and bring them into the lecture class so you can spend most of the time listening to the lecturer rather than transcribing. Do not assume these notes or recordings/video capture are a suitable substitute to attending the lectures. Students historically fall behind and perform poorly if they do not attend the lecture classes and often further material is provided in the lecture class, so a student that does not attend the class will not be as well prepared as they would otherwise be. Learning is an active process, and as such, you must engage with the material. This means downloading and reading the lecture notes and relevant sections of the textbook (and beyond) before and after lectures is strongly recommended. Quizzes and a mid session test will be run in the lecture classes. The quizzes will be multiple choice and short, but cover material in recent weeks prior to that day’s lecture, therefore all students are expected to keep up to date with lecture material through revision each week. Additional on-line quizzes will also be provided. The quizzes and mid session test are designed to allow you to continuously learn and to identify what you understand and the areas that you need to spend more time on, with minimal assessment penalty.

• Tutorials will be run to assist your understanding of the course material. Suggested questions to be covered for each tutorial class are provided at the end of this document. Attempting the questions before the tutorial class to identify what you need assistance on is highly recommended. The tutor will often ask for students to assist in answering the questions throughout the class. Attendance records will be kept, and while tutorials do not contribute formally to your mark, poor tutorial attendance may be viewed unfavourably and could affect the final mark if a student is on a grade boundary.

• Laboratory classes are designed to develop basic laboratory skills, general safety practices and critical and analytical thought. Pre-laboratory questions are designed to make sure you are ready for the laboratory work and have grasped the relevant theory and safety practices necessary. In-lab and post-lab work are designed to allow you to appropriately record your experimental observations and your calculations in a detailed and accurate manner and assess your understanding of the theory behind the experiments conducted and to use this understanding to solve related problems. The laboratory experiments are scaffolded such that the expectations of pre-lab, in-lab and post-lab reports increase throughout the course as understanding of the concepts and skill in how to record the data and interpret results develops.
**RELATIONSHIP BETWEEN ASSESSMENT AND LEARNING OUTCOMES**

**Assessment**: The grades you achieve at Macquarie University are descriptive rather than numeric. The assessments and conditions on your performance (attendance, completion, etc) help to decide which of these descriptive grades applies to your work for the entire unit.

Your raw marks from assessments are combined into a weighted sum. The weighted sums for the whole class are ranked, and compared with rankings for the same unit in previous offerings and across other units for appropriate consistency. This process of comparison allows for the identification of any unusual influences on class performance that might warrant the weighted sums of marks being scaled or otherwise altered. The numerical cut-offs for each descriptive grade are then determined. The numerical value with which you will be issued (the Standardised Numerical Grade, SNG) is determined to match your descriptive grade by standardising the weighted sums of raw marks to match standard scores out of 100. The SNG gives you an indication of how you have performed within the band for your descriptive grade. As the SNG is the result of scaling the weighted sum of your raw marks, you won't be able to:
- work out your exam mark based on the assignment marks you already know and the SNG;
- determine that you were "one mark away" from a different grade.

It is our professional responsibility as your teachers to assign you a descriptive grade that accurately reflects your performance in a unit. Our grading decisions are subject to scrutiny from our academic colleagues at the Department, Faculty and University Senate level.

The Grades range from High Distinction to Fail, and are defined in the Handbook as follows:

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<th>Grade</th>
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<th>Description</th>
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<tr>
<td>HD</td>
<td>85-100</td>
<td>Work of outstanding quality. This may be demonstrated in areas such as criticism, logical argument, interpretation of materials or use of methodology. This grade may also be awarded to recognise a high order of originality or creativity in student performance.</td>
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<tr>
<td>D</td>
<td>75-84</td>
<td>Work of superior quality in the same areas of performance as above. This grade may also be awarded to recognise particular originality or creativity in student performance.</td>
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<tr>
<td>Cr</td>
<td>65-74</td>
<td>Work of predominantly good quality, demonstrating a sound grasp of content together with efficient organisation, selectivity and use of techniques.</td>
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<tr>
<td>P</td>
<td>50-64</td>
<td>Satisfactory achievement of unit objectives.</td>
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<tr>
<td>F</td>
<td>0-49</td>
<td>Failure to achieve unit objectives.</td>
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Your grade awarded at the completion of the unit will be based on marks obtained as follows:

- In-class and on-line quizzes: 15%
- Mid-term Exam: 15%
- Laboratory: 20%
- Final Exam: 50%
• **In-class and on-line quizzes:** There will be two in-class quizzes, one on **Friday** of **week 4** (Aug 23) and one on **Thursday** of **week 12** (Oct 31) and four on-line quizzes due on **Friday** of **week 6** (Sept 6), **Friday** of **week 8** (Oct 4), **Friday** of **week 10** (Oct 18) and **Friday** of **week 13** (Nov 8). You will find that these quizzes assist you in revising the course material as the course progresses. All quizzes contain only multiple choice questions. For the in-class quizzes, the answers will be explained immediately afterwards. For the on-line quizzes, further specific details on how to access these will be provided in week 2.

• **Mid-term Exam:** There will be a 50 minute test (15%) in Week 7, Friday September 13, 12.05am sharp. This will cover lectures 2-15, up to the end of aromatic compounds. This is designed to give you specific feedback on your understanding of the topics up to this stage to assist you in your further study of the unit.

  **There will be no make-up exam for the mid-term exam. Medical certificates or official documents must be lodged along with a special consideration form online at ask.mq.edu.au as soon as possible if you are absent for the mid-term. In this case, if the circumstances are accepted as valid, your final exam mark will be used for the missed mid-term mark (i.e. final exam mark will be out of 65%).**

• **Laboratory:** Full details on the breakdown of the laboratory assessment are given in the laboratory manual. The mark includes pre-lab, in-lab and post-lab reports and a practical exam. **A passing grade in the practical component is required to pass the unit.** The assessment tasks start off simple and build on skills and knowledge developed throughout the course.

**Final exam:** The final exam (/50%) will be 3 hours in length with 10 minutes reading time. It is designed to address specific understanding of all the topics presented within the course and to show that the knowledge obtained can be applied to new problems.

Your marks (in-class and online quizzes, mid-term exam, laboratory) will be placed on the CBMS103 web site. The **minimum requirement** to achieve a passing grade for CBMS103 is **satisfactory performance** in separately both the coursework component and the laboratory component.

**Final Examination Details:** The examination timetable will be available in Draft form approximately eight weeks before the commencement of the examinations and in final form approximately four weeks before the commencement of the examinations. You are expected to present yourself for examination at the time and place designated by the University in the Examination Timetable. This could be any day after the final week of semester and up until the final day of the official examination period. It is Macquarie University policy to **not set early examinations** for individuals or groups of students. All students are expected to ensure that they are available until the end of the teaching semester, that is, the final day of the official examination period.

The only exception to sitting an examination at the designated time is because of documented illness or unavoidable disruption. Absence from the final exam will result in a grade of F except in the case of a genuine medical emergency or misadventure as defined by the University (see below). In these circumstances you may wish to consider applying for Special Consideration at ask.mq.edu.au.
University has a policy on special consideration request that may be found at www.mq.edu.au/policy/docs/special_consideration/policy.html. The University recognises that at times an event or set of circumstances may occur that:

- could not have reasonably been anticipated, avoided or guarded against by the student AND
- was beyond the student’s control AND
- caused substantial disruption to the student’s capacity for effective study and/or completion of required work AND
- substantially interfered with the otherwise satisfactory fulfilment of a unit or program requirements AND
- was of at least three (3) consecutive days duration within a study period and/or prevented completion of a formal examination.

This policy is instituted to support students who experience serious and unavoidable disruption such that they do not reach their usual demonstrated performance level. The form required to submit for a request for special consideration can be found at ask.mq.edu.au. This form should be submitted as soon as possible to allow due consideration.

**Non-Attendance for Assessable Tasks:** Students unable to attend a laboratory class, tutorial class, quizzes or exams due to illness or other extenuating circumstances must fill in a special consideration form at ask.mq.edu.au and provide formal documentary evidence as soon as possible.

For students who do have a valid reason for the non-attendance (via special consideration formally approved by the unit coordinator), if in-class quizzes or one laboratory class is missed, you will get an average mark of your other quizzes or laboratory reports. If more than one laboratory class is missed you must speak to A/Prof Jamie to discuss alternative options. If the mid-term exam is missed, there will generally be no make up exam. **In this case, your final exam mark will be used for the missed mid-term mark (i.e. final exam mark will be out of 65%).** If the final exam is missed due to a valid reason a Supplementary Examination can be granted. If a Supplementary Examination is granted, the examination will be scheduled after the conclusion of the official examination period. The offer of a supplementary examination is at the discretion of the academic staff and you should not assume that it will be provided. Supplementary Examinations are **not make-up exams,** i.e., a poor result in the final examination is not reason to request a supplementary examination. **Please note that if you are sick at or in the days just prior to the scheduled exam time you should contact the unit coordinator as soon as possible to discuss the possibility of a supplementary exam.** It is normally unwise to sit an exam if illness or other circumstances will significantly affect your performance.

If an absence is **anticipated** (perhaps for a mandatory religious or University associated sporting event) you must inform the unit convenor **in advance** that this will be the case and discuss alternative arrangements. It is your responsibility to undertake this. Notification after the event of an anticipated absence will not be looked upon favourably. For any unjustified absences students will receive a zero mark for the assessment task.

**Extensions:** Students unable to complete a form of assessment (laboratory reports, quizzes) on time due to illness or other extenuating circumstances must fill in a special consideration form at ask.mq.edu.au and provide formal documentary evidence as soon as possible and contact A/Prof Joanne Jamie to discuss possible extensions. Extensions will be granted based on merit and will be more favourably considered if consultation with the unit coordinator on the need for an extension occurred BEFORE the due date. **If there is no acceptable reason for a late submission, marks will be deducted for every day late.**
UNIVERSITY POLICY ON ASSESSMENT

The University considers that assessment “of student learning performance and feedback on progress are pivotal and important processes in University learning and teaching. Assessment tasks communicate to students what must be learned and are vehicles by which the University assures itself, and society, of its graduates’ capabilities” and is based on the “premise that it is important that through assessment students are encouraged to engage in their education, rather than merely pursue grades. Student engagement is best facilitated by learner managed learning in which students are active partners in the process through undertaking challenging responsibilities and making choices.” There are responsibilities and rights for both staff and students in respect to assessment. These include, but are not limited to, the right of academic staff to require that students:

- be focused on learning rather than merely the achievement of grades;
- make the effort to be informed of the rules and requirements for progression in their degree program;
- get assistance from the department, faculty and/or institution if they so require it;
- behave ethically and responsibly in their conduct of assessment tasks;
- engage in critical self evaluation in terms of their progress towards the espoused learning expectations;
- submit work on time that is their own except when shared ownership is part of the task;
- notify their lecturers as soon as possible if difficulties arise with timing, online access, availability of resources or other requirements of the task;

Students have a right to:

- be informed about all aspects of assessment policy and practices in each unit of study including criteria, standards and procedures to be met and penalties for breaches;
- have consistent application of policies, procedures and penalties;
- timely return of results with feedback to enable improved performance;
- information that allows them to calibrate their own performance against the expected performance standards;

The full statement on the Assessment Policy, Code of Practice and Procedure can be found at:

ACADEMIC HONESTY

The University declares that it is a “fundamental principle” that “all staff and students act with integrity in the creation, development, application and use of ideas and information”. This means that:

- all academic work claimed as original is the work of the author making the claim
- all academic collaborations are acknowledged
- academic work is not falsified in any way
- when the ideas of others are used, these ideas are acknowledged appropriately

You should be familiar with the University’s Policy on Academic Honesty practices and its Statement on Ethics. For further details see:

Academic Honesty Policy:  www.mq.edu.au/policy/docs/academic_honesty/policy.htm

The policies and procedures explain what academic dishonesty is, how to avoid it, the procedures that will be taken in cases of suspected dishonesty, and the penalties if you are found guilty.
Penalties may include a deduction of marks, failure in the unit, and/or referral to the University Discipline Committee.

Examples of dishonest academic behaviours are:

**Plagiarism:** Using the work or ideas of another person and presenting this as your own without clear acknowledgement of the source of the work or ideas. This includes, but is not limited to, any of the following acts:

a) copying out part(s) of any document or audio-visual material or computer code or web site content without indicating their origins

b) using or extracting another person’s concepts, experimental results, or conclusions

c) summarising another person’s work

d) submitting substantially the same final version of any material as another student in an assignment where there was collaborative preparatory work

e) use of others (paid or otherwise) to conceive, research or write material submitted for assessment

f) submitting the same or substantially the same piece of work for two different tasks (self-plagiarism).

**Deception:** includes, but is not limited to, false indication of group contribution, false indication of assignment submission, collusion, submission of a work previously submitted, creating a new article out of an existing article by rewriting/reusing it, using the same data to form the same arguments and conclusion, presenting collaborative work as one’s own without acknowledging others’ contributions, cheating in an examination or using others to write material for examination.

**Fabrication:** includes, but is not limited to, creating fictitious clinical data, citation(s), or referee reports.

**Sabotage:** includes, but is not limited to, theft of work, destruction of library materials.

Assignments are to be your own work. Using someone else’s words (either another student’s or from a book or journal article or a web site) without clear acknowledgement is plagiarism and can incur serious penalties. If it is ever necessary to use someone else’s words for a phrase or sentence, they should be placed in quotation marks and acknowledged at the end of the sentence. If you use or modify a diagram or figure from another author, that must be acknowledged underneath (e.g. Figure 3 from Fundamentals of Organic Chemistry, McMurry *et al.*, 2010). Lecturers want to read your own words and ideas.

In the event that a lecturer identifies a case of academic dishonesty, the student will be advised, either on the submitted work or by a separate letter, and a record kept in the Faculty office. Students will always have the opportunity to discuss each case with their Lecturer if they indicate they wish to do so by either contacting the Lecturer or the Head of Department. Proven cases of academic dishonesty may result in the immediate award of an “F” grade.

**OTHER UNIVERSITY POLICIES**

Macquarie University is developing a number of policies in the area of learning and teaching. Approved policies and associated guidelines can be found at Policy Central: www.mq.edu.au/policy

**STUDENT SUPPORT SERVICES**
Macquarie University provides a range of Student Support Services. Details of these services can be obtained at:
http://students.mq.edu.au/support/

**CHANGES TO THE UNIT SINCE LAST OFFERING**

Since its previous internal offering, some minor changes have been made to the laboratory experiments and the lecture material. This follows feedback from students in the 2012 internal CBMS103 unit.

**FEEDBACK**

We are always open to suggestions for improving the content and delivery of this course. We are very happy to receive any constructive criticism that you may wish to provide.

We hope you find this course both educational and fun!

Joanne Jamie, Bridget Mabbutt, Andrew Try, Maree Nelson and Fei Liu
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<td>1</td>
<td>L1 - Introduction</td>
<td>L2 - Structure and Bonding</td>
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<td>L7 – Isomerism and Stereochemistry</td>
<td>L8 – Isomerism and Stereochemistry</td>
<td>Quiz 1 (in-class L2-stereochemistry</td>
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<td>L9 – Isomerism and Stereochemistry</td>
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<td>L12 - Reactions of Alkenes</td>
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<td>L10 – Reaction Mechanisms, Alkenes</td>
<td>L11 - Reactions of Alkenes</td>
<td>Quiz 2 (on-line alkanes, stereoisomery)</td>
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<td>L18 - Alkyl Halides</td>
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<td>L13 - Aromatic Compounds</td>
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<td>L15 - Aromatic Compounds</td>
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<td>L16 – Alkyl Halides</td>
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<td>6</td>
<td>L19 - Alcohols, Ethers &amp; Phenols</td>
<td>L20 - Alcohols, Ethers &amp; Phenols</td>
<td>L21 - Mid-Term Test (L2-L15)</td>
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<td>8</td>
<td>L22 - Aldehydes and Ketones</td>
<td>L23 - Aldehydes and Ketones</td>
<td>Quiz 3 (on-line alkyl halides, alcohols,</td>
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<td>L24 - REVIEW OF MID SESSION TEST</td>
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<td>L26 - Carbohydrates</td>
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<td>L28 - Carboxylic Acids and Derivatives</td>
<td>L29 - Carboxylic Acids and Derivatives</td>
<td>Quiz 4 (on-line alcohols, phenols, others,</td>
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<td>L30 – Amines (McMurry Ch12)</td>
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<td>Quiz 5 (in-class carbohydrates, carboxylic</td>
<td>L36 - Summary and Review</td>
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<td>L37 - Summary and Review</td>
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<td>Quiz 6 (on-line amines, amino acids and</td>
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Timetable may be subject to minor changes
**TUTORIAL CLASSES**

**Tutorial classes** run weekly and begin in week 2. Tutorial attendance is compulsory. Your allocated tutorial time will be given on the ilearn unit web page.

During tutorial time the problems assigned below may be discussed. It is most likely that the tutor will choose a selection of the questions assigned based on class requests, rather than attempting every question. **You MUST work on these problems on your own before the tutorial so as to fully take advantage of this exercise and should bring in the textbooks, lecture notes and accompanying resources such as the model kit to assist the session and be prepared to ask questions on sections that you wish to have clarified.**

<table>
<thead>
<tr>
<th>Session</th>
<th>Tutorial questions from McMurry 7th edition</th>
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<tbody>
<tr>
<td>Week 2</td>
<td>Structure and Bonding: 1.31, 1.33, 1.35, 1.37, 1.42, 1.41, 1.45, 1.48, 1.51, 1.52, 1.64</td>
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<td>Week 3</td>
<td>Acids and Bases, Alkanes and Cycloalkanes: 1.59, 1.60, 2.45, 2.46, 2.47, 2.52, 2.56, 2.59, 2.60</td>
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<td>Week 5</td>
<td>Naming and Reactions of Alkenes and Alkynes: 4.27, 4.28, 4.33, 4.39, 4.42, 4.44, 4.45a,b</td>
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<td>Week 6</td>
<td>Aromatic Compounds: 5.26, 5.27, 5.32, 5.33, 5.36, 5.47, 5.58</td>
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<td>Week 7</td>
<td>Alkyl halides: 7.25, 7.26, 7.30, 7.33, 7.34, 7.36, 7.44, 7.51, 7.54</td>
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<td>Week 8</td>
<td>Alcohols, Ethers and Phenols: 8.26a-d, 8.27a-e, 8.34, 8.35, 8.42, 8.46, 8.67a,b</td>
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<td>Week 11</td>
<td>Carboxylic Acids and Derivatives: 10.33a-c,e-f, 10.34, 10.39, 10.44, 10.56</td>
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<td>Week 12</td>
<td>Amines: 12.24, 12.25, 12.35, 12.38, 12.39, 12.47, 12.51</td>
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<td>Week 13</td>
<td>Amino Acids, Peptides and Nucleic Acids: 15.26, 15.29a, 15.30, 15.32, 15.33, 15.56, 16.32, 16.11</td>
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These questions will also be placed on the CBMS103 ilearn web site.