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| Course Code: | FND002 |
| Course Name: | Chemistry |
| Trimester: | Trimester 2, 2018 |
| Program: | Foundation Program |
| Credit Points: | 10 |
| Course Coordinator: | Jesse Rostagno |
| Document modified: | 1 st May 2018 |

Teaching Team

Your lecturer/tutor can be contacted via the email system on the portal.

Name

Email

Jesse Rostagno

jesse.rostagno@staff.griffithcollege.edu.au

Staff Consultation

Your lecturer/tutor is available each week for consultation outside of normal class times. Times that your lecturer/tutor will be available for consultation will be given in the first week of lectures. A list of times and rooms will be published on the Griffith College Portal under the “myTimetable” link.

Prerequisites

There are no prerequisites for this course

Brief Course Description

This course provides students with an introduction to the molecular basis of physical properties of materials, the reasons chemical reactions occur and the energy changes involved.

Rationale

The purpose of this course is to introduce students to the study of matter and its interactions, therefore providing a link with other branches of natural science. The course is designed to assist students in coming to appreciate the impact of chemical knowledge and technology on society. The course provides a foundation for students who wish to continue to tertiary level courses in science, engineering or health science.

Aims

The aim of this course is to provide students with an understanding of the basic concepts and processes of chemistry. Students will develop analytical, problem solving, calculation and technical report writing skills. Students will also develop an appreciation of safe and effective manipulative skills in the laboratory environment.

Learning Outcomes

Upon successful completion of this course you will be able to:

1. Use scientific terminology to demonstrate an understanding of basic chemical knowledge;
 2. Demonstrate an understanding of matter by its state and bonding behaviour using the periodic table as a reference;
 3. Demonstrate an understanding the electronic and molecular structures of common substances;
 4. Demonstrate an understanding of the different types of chemical reactions;
 5. Solve qualitative and quantitative chemical problems and demonstrate reasoning;
 6. Demonstrate an understanding of the chemical behaviour of ionic and molecular substances in aqueous solutions;
 7. Perform simple laboratory experiments demonstrating safe and proper use of standard chemistry glassware and equipment;
 8. Demonstrate the ability to support ideas with research material;
 9. Demonstrate the ability to think critically, abstractly and logically.
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Texts and Supporting Materials

The following Textbook and Resources will be used throughout the trimester:

- Assessable course workbook available for purchase through the campus book shop
 - Cracolice, M. & Peters, E. (2013). Introductory Chemistry. an active learning approach, 5th ed. Brooks/Cole. ISBN 978-1-111-99007-7
 - Glencoe Chemistry: Matter and Change (online text) available here:
http://www.marric.us/files/HS_chem_solving_problems.pdf
 - Course notes will be available on the Griffith College portal. Students are expected to download these prior to each class.
 - A scientific calculator is essential in this course and should be brought to class each week.
 - An approved laboratory coat and safety glasses are also required for laboratory classes.

Details regarding where you can purchase some of the above resources will be provided during class time.

Organisation and Teaching Strategies

The teaching and assessment portion of the trimester is of 14 weeks duration - inclusive. Classes are usually provided in four (4) hour blocks during each of the first twelve (12) weeks of trimester. For each of Weeks 1-12 you are expected to attend the entire teaching session each week.

Classes will be scheduled as indicated below:

A) Two [2] hours will be spent during class time each week presenting and discussing concepts and techniques that you need to know to pass the course.

B) Approximately two [2] hours will be spent each week to support the class lectures. These may include tutorials involving problem solving, video analysis, set exercises, computer based research, laboratory classes or online learning.

Practical classes will be scheduled as indicated below:

- 2 x Four [4] hours will be spent completing laboratory exercises relating to concepts that have been taught in previous weeks. These will be held on the Nathan or Gold Coast campus in the Scientific Laboratories. Further details will be provided during class time.

During weekly class time (4 hours) you will be presented with the course content through the use of presentations, videos and the use of internet sites. There will also be opportunities for you to reflect on and participate in discussion with your teacher and classmates about the content presented during classes. These discussions will provide you with the opportunity to develop a deeper understanding of the basic concepts relevant to course content and apply these in order to fulfil the aims and objectives of the course. It is expected that you devote approximately 6 hours of private study each week, which will include weekly homework reading and exercises, and preparation of assessment items. A 10-credit point subject at University constitutes approximately 10 hours of work towards that subject each week.

Many of the resources will be made available to you through the Course Notes section on the Griffith College portal. There is the opportunity to access course resources via online mode so you will need to have Internet access to the Griffith College portal so that you can access the material available for your learning.

Where class times conflict with Public Holidays, 'makeup' classes may be organised on a different day. Further time is made available for student consultation with the Lecturer each week [see Staff Consultation].

Contact Hours

The expected contact hours per week for this course comprises of:

Formal classes: 4 Hours

Formal Homework: 4 Hours

On-line component: Quizzes throughout semester - 1 Hour

Supervised Consultation: 1 Hour

Total: 10Hours

Attendance:

Your attendance in class will be marked twice during a four hour class. To receive full attendance, you must be present in the classroom on both occasions. Therefore, you are encouraged to attend and participate in all classes throughout the trimester.

Participation in Class:

During classes each week you are expected to actively participate in exercises covering the current topic.

Consultation Time:

Consultation time is offered on a weekly basis in order to support student learning.

Course Materials:

Before attending classes each week you are expected to prepare by pre-reading the class notes, and skim-reading the relevant readings from the text and other sources. You are also required to bring the required workbook to class each week for the workshop sessions.

Laboratory Sessions:

In order to participate in the laboratory classes, you must have successfully completed the appropriate online safety quizzes, wear closed in shoes, a lab coat and safety glasses.

Before attending Laboratory classes, you must read the appropriate section in the laboratory notes. If you do not have the necessary laboratory equipment/resources, for safety reasons you may be excluded from participating in the laboratory class.

Independent Learning:

Throughout this course you will be encouraged to take personal responsibility for managing your own learning and your own time. In addition to the 4 hours spent in class time for this course you are expected to undertake independent study outside of class time. This independent learning will involve reading and preparing for classes and completing assignments and other assessment tasks. There will be the opportunity to use online resources via the Griffith College portal in order to enhance your learning.

Program Progression:

You are reminded that satisfactory Program Progression requires that attendance in classes is maintained at equal to or greater than 80%, and that GPA is maintained at equal to or greater than 3.5 [please see Griffith College Policy Library - Program Progression Policy - for more information].

Specialist Facilities

Facilities and Resources / Specific Resources required:

- Indicate any specific facilities and resources required for delivery of this subject: Scientific laboratories (Nathan or Gold Coast campus)
 - Indicate any specific learning resources required for this subject: Learning resources include: recommended textbook, Portal materials
 - Indicate any specific IT or electronic learning resources required for this subject: Computer, projector.
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Content Schedule

PLEASE NOTE:

Labs for FND002 Chemistry will be:

MG campus

Mondays 9:00am to 1:00pm in room N55_-1.29 in weeks **10 & 12**

GC campus

Wednesdays 8:00am to 12:300pm in room G16_4.24 in weeks **3 & 9**

Teaching Schedule Breakdown

| Unit | Topic | Activity | Readings |
|------|--|----------|--|
| 1 | Introduction to chemistry -matter and changes of matter. Data analysis. | Class | Cracolice: chapters 1 – 2 Glencoe online text: chapters 1 – 3 |
| | Overview of Course Assessment | Class | |
| 2 | Atomic theory: electron configuration and chemical periodicity. | Class | Cracolice: chapters 5 + 11 Glencoe online text: chapters 4 – 6 |
| 3 | Elements, Ionic compounds and nomenclature. Metallic bonds | Class | Cracolice: chapter 6, 12 Glencoe online text: chapters 7 – 8 |
| 4 | Covalent compounds and nomenclature. Electronegativity, structure and shape. | Class | Cracolice: chapter 6, 12 Glencoe online text: chapter 9 |
| 5 | Chemical change and chemical reactions. Balancing chemical equations. Introduction to the mole | Class | Cracolice: chapters 8 – 9 Glencoe online text: chapters 10 – 11 |
| 6 | Quantity relationships in chemical reactions | Class | Cracolice: chapter 10 Glencoe online text: chapters 11 – 12 |

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|-------|--|------------|--|
| 7 | States of matter – intermolecular forces. Gases, liquids, and solids | Class | Cracolice - Chapters 4 and 15 Glencoe online text: chapters 13 – 14 |
| 8 | Aqueous solutions Acids and bases | Class | Chapters 16 – 17 Glencoe online text: chapters 15 and 19 |
| 9 | 'Chemical Equilibrium, Redox Reactions and Electrochemistry | Class | Cracolice: chapters 2 and 18 Glencoe online text: chapters 16 – 18 |
| Lab 1 | Laboratory 1 – Observational Skills, Reactivity and Solubility | Laboratory | n/a |
| Lab 2 | Laboratory 2 - Titrations | Laboratory | n/a |
| 12 | Revision | Class | Revision Workbook and all previous chapters |

Assessment

This section sets out the assessment requirements for this course.

Summary of Assessment

| Item | Assessment Task | Weighting | Relevant Learning Outcomes | Due Date |
|------|---------------------|-----------|----------------------------|-------------|
| 1 | Mid Trimester Exam | 25% | 1-5 | 7 |
| 2 | Research Assignment | 15% | 1,8-9 | 9 |
| 3 | Workbook | 20% | 1,4,6-8 | 12 |
| 4 | Final Exam | 40% | 1-6,8 | Exam Period |

Assessment Details

Course assessment is divided into two sections:

- 1) theoretical and conceptual understanding is tested in the mid trimester exam, the final exam and the research assignment.
- 2) the application of theoretical concepts is tested in the Laboratory exercises.

You are to complete all assessment individually.

Mid-trimester exam: The mid-trimester exam will be a one hour examination held in class during week 7. It will include material covered during weeks 1 – 6.

Research Assignment: The assignment will focus on a topic which may not be covered in class. It will assess your ability to understand and also to apply the concepts to a practical problem. You will be expected to research and demonstrate your understanding and interpretation of the literature and how it relates to our knowledge of the world today.

Workbook: The workbook will be assessed weekly during the workshops on your ability to understand and answer questions around each topic presented in class. Effort, tidiness and accuracy will all be assessed, as well as your laboratory sessions.

Laboratories: The laboratory component of the course is composed of two experimental sessions . The laboratory investigations assess your ability to operate safely and proficiently in a chemical laboratory, to collect and organise data, and to use complex reasoning processes. As part of the laboratory exercises, you will be given instruction on how to process data and understand the different parts of written reports. You will be required to complete the two separate laboratory sections of your assessable workbook - these involve presenting and interpreting the data that you have collected.

Final Exam: The final examination assesses your knowledge and applied skills in topic areas related to and developed during the course. It gives you an opportunity to demonstrate learning throughout the trimester. It provides a culmination point to encourage a planned effort and consistent application and requires you to review and apply material covered in the trimester. Any material that is either a) covered in classes, b) discussed within the required reading textbook, c) referred to as 'other required reading' during trimester, may be assessed in the projects, exercises and the Final Exam.

Satisfactory completion of the course

To satisfactorily complete the course, you must achieve a minimum overall mark of 50%.

PLEASE NOTE: The assignment is required to be submitted to Turnitin. Failure to obtain and attach a satisfactory Originality Report will mean that the assignment will be investigated to determine if a breach of Academic Integrity is evident. Detailed instructions and a Marking Guide will be provided during the trimester. Late submissions will attract a penalty as described in the Assessment policy.

Internal moderation and benchmarking processes

All assessment will be set by teaching staff with a collaborative approach that includes peer review and approval by the appropriate Program Convenor. Significant pieces of assessment in the course are internally moderated in a collaborative manner by relevant teaching staff to ensure that the criteria and standards are correctly and consistently applied. Before Final Exams are marked, teachers conduct sample marking to ensure that the criteria and standards are correctly and

consistently applied. In addition, benchmarking of the final exam in each course is undertaken by an external person (usually a lecturer in a similar Diploma level course). The benchmarking report provided by the external lecturer informs continuous improvement practices for the subsequent trimester.

Submission and Return of Assessment Items

Normally you will be able to collect your assignments in class within fourteen [14] days of the due date for submission of the assignment.

Penalties for late submission without an approved extension

Penalties apply to assignments that are submitted after the due date without an approved extension. Assessment submitted after the due date will be penalised 10% of the TOTAL marks available for assessment (not the mark awarded) for each day the assessment is late. Assessment submitted more than five days late will be awarded a mark of zero (0) For example:

- > 5 minutes and <= 24 hours 10%
- > 24 hours and <= 48 hours 20%
- > 48 hours and <= 72 hours 30%
- > 72 hours and <= 96 hours 40%
- > 96 hours and <= 120 hours 50%
- > 120 hours 100%

Note:

- Two day weekends will count as one day in the calculation of a penalty for late submission.
- When a public holiday falls immediately before or after a weekend, the three days will count as one day in the calculation of a penalty for late submission.
- When two public holidays (e.g. Easter), fall immediately before or after, or one day either side of a weekend, the four days will count as two days in calculating the penalty for late submission.
- When a single public holiday falls mid-week, the day will not be counted towards the calculation of a penalty.

Please refer to the Griffith College website - Policy Library > Assessment Policy for guidelines and penalties for late submission.

Retention of Originals

You must be able to produce a copy of all work submitted if so requested. Copies should be retained until after the release of final results for the course.

Extensions

To apply for an extension of time for an assignment, you must submit an Application for Extension of Assignment form to your teacher at least 24 hours before the date the assignment is due. Grounds for extensions are usually: serious illness, accident, disability, bereavement or other compassionate circumstances and must be able to be substantiated with relevant documentation [e.g. Griffith College Medical Certificate]. Please refer to the Griffith College website - Policy Library - for guidelines regarding extensions and deferred assessment.

Assessment Feedback

Marks awarded for assessment items will also be available on the on-line grades system on the Student Website within fourteen [14] days of the due date.

Generic Skills

Griffith College aims to develop graduates who have an open and critical approach to learning and a capacity for lifelong learning. Through engagement in their studies, students are provided with opportunities to begin the development of these and other generic skills.

Studies in this course will give you opportunities to begin to develop the following skills:

| Generic Skills | Taught | Practised | Assessed |
|----------------------------------|--------|-----------|----------|
| Written Communication | | Yes | Yes |
| Oral Communication | | Yes | |
| Information Literacy | | Yes | Yes |
| Secondary Research | Yes | Yes | Yes |
| Critical and Innovative Thinking | | Yes | |
| Academic Integrity | Yes | Yes | Yes |
| Self Directed Learning | | Yes | |
| Team Work | | Yes | |
| Cultural Intelligence | | | |
| English Language Proficiency | | | |

Additional Course Generic Skills

| Specific Skills | Taught | Practised | Assessed |
|-------------------|--------|-----------|----------|
| Laboratory skills | Yes | Yes | Yes |

Additional Course Information

Attendance at practical laboratory sessions is an integral part of this chemistry course. It is important that you attend all laboratory sessions to gain the maximum benefit from the course.

Learning Support

In addition to formal contact hours, you are provided with extra support through individual consultation with teaching staff, English language support, and self-access computer laboratories.

Griffith College is committed to providing additional academic assistance to students to maximise their opportunity to successfully complete units of study. Learning Advisors conduct regular workshops in skill areas essential to studies. These include: time management, goal setting, essay

preparation, examination techniques, academic writing skills and maths. Further information on programs available can be accessed on the Griffith College 'Support' tab on the Portal (<http://studentsupport.griffithcollege.qld.edu.au/>) or by asking the Griffith College staff on reception.

Teacher and Course Evaluations

Student feedback is respected and valued by teachers and the College. Students are encouraged to provide their thoughts on the course and teaching, both positive and critical, directly to their teacher or by completing course and teacher evaluations.

Academic Integrity

Griffith College is committed to maintaining high academic standards to protect the value of its qualifications. Academic integrity means acting with the values of honesty, trust, fairness, respect and responsibility in learning, teaching and research. It is important for students, teachers, researchers and all staff to act in an honest way, be responsible for their actions, and show fairness in every part of their work. Academic integrity is important for an individual's and the College's reputation.

All staff and students of the College are responsible for academic integrity. As a student, you are expected to conduct your studies honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is considered a breach of academic integrity and is unacceptable.

Some students deliberately breach academic integrity standards with intent to deceive. This conscious, pre-meditated form of cheating is considered to be one of the most serious forms of fraudulent academic behaviour, for which the College has zero tolerance and for which penalties, including exclusion from the College, will be applied.

However, Griffith College also recognises many students breach academic integrity standards without intent to deceive. In these cases, students may be required to undertake additional educational activities to remediate their behaviour and may also be provided appropriate advice by academic staff.

As you undertake your studies at Griffith College, your lecturers, tutors and academic advisors will provide you with guidance to understand and maintain academic integrity; however, it is also your responsibility to seek out guidance if and when you are unsure about appropriate academic conduct.

In the case of any allegation of academic misconduct made against a student he or she may request the guidance and support of a Griffith College Student Learning Advisor or Student Counsellor.

Please ensure that you are familiar with the [Griffith College Academic Integrity Policy](#); this policy provides an overview of some of the behaviours that are considered breaches of academic integrity, as well as the penalties and processes involved when a breach is identified.

For further information please refer to the Academic Integrity Policy on the Griffith College website – Policy Library.

Risk Assessment Statement

This course follows Griffith College and Griffith University Workplace Health and Safety Laboratory guidelines.

The aim of workplace health and safety is to make sure that people do not get sick or injured at the workplace. The legislation dealing with this in Queensland is called the Workplace Health and Safety Act, 1995. Anyone who can affect workplace health and safety has an obligation under this Act.

As a student, you have an obligation to yourself and others to undertake activities in a safe manner. You must follow instructions which are provided for safety. You must not put yourself or anyone else at risk. Care especially needs to be taken when you are performing activities which can affect others.

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