

Profile information current as at 19/04/2024 11:15 am

All details in this unit profile for CHIR13008 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview

This unit follows on from Foundations of Chiropractic Practice 4. The unit will utilise simple case scenarios to further develop your clinical reasoning skills. You will understand the pathologies of the musculo-skeletal system of the spine, you will learn to formulate a differential diagnosis using your basic assessment and diagnostic skills gained in Foundations of Chiropractic Practice 1-4 and Clinical Assessment and Diagnosis 1. The tests/assessments covered in Clinical Assessment and Diagnosis 2 will be integrated and applied to diagnostic and assessment protocols. You will be required to formulate a chiropractic treatment/management approach according to the case scenario studied. Spinal and peripheral techniques will also be 'fine-tuned' and practiced.

Details

Career Level: Undergraduate

Unit Level: *Level 3* Credit Points: *6*

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

Effective 2016: Pre-requisites: CHIR12006 Foundations of Chiropractic Practice 4 and CHIR12004 Neuromusculoskeletal Anatomy 1 And Co-requisite CHIR12007 Clinical Assessment and Diagnosis 1

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 1 - 2019

- Brisbane
- Mackay
- Sydney

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses

Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Portfolio**Weighting: 20%

2. Practical Assessment

Weighting: 50% 3. **Examination** Weighting: 30%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the <u>University's Grades and Results Policy</u> for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the <u>CQUniversity Policy site</u>.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Moodle 'have your say'

Feedback

More more practical time, even if it is just for student led practice,

Recommendation

More supervised practise sessions for students needs to be organised.

Feedback from Moodle 'have your say

Feedback

It would be good if time was allocated towards going through the requirements of the portfolio in more detail, which will then enable a greater appreciation of its relevance.

Recommendation

A greater effort was made in term 1 to put together clear portfolio instructions. Next year for CHIR13008, I will also record these instructions and discuss them in the zoom session.

Feedback from Moodle 'have your say'

Feedback

It would be good if we were provided with our rubrics for the final OSCE's. We all want to improve on our skills, and without seeing where we went wrong then we aren't able to improve.

Recommendation

Next year the rubrics will be provided for CHIR13008 and CHIR13009.

Feedback from Moodle 'have your say'

Feedback

The tests are on videos and the tissue loaded is not clearly stated on the slide

Recommendation

A table will be written and uploaded in Moodle of all the tests clearly outlining the respective tissue that is loaded.

Feedback from Moodle 'have your say'

Feedback

The practical classes here at Brisbane are very overcrowded, sometimes it is hard to get the required attention especially when the tutor's have to deal with 20 plus people. The class time slots that are selected prior to term are not enforced.

Recommendation

Students in the latter class in Brisbane found the 6-8pm session too late. This will be discussed with the tutors across the campuses to try to enforce students to turn up to their allocated tutorial. Increased practice sessions will help this concern.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

6 - Information Technology Competence

- 1. Describe the musculo-skeletal pathologies of the spine.
- 2. Interpret the clinical case findings from the case history and physical examination to form differential diagnoses.
- 3. Discuss chiropractic management approaches within the context of the Australian Health care system.
- 4. Critically analyse and reflect on relevant sources of information relating to neuomusculoskeletal diagnosis including those from reliable, appropriate, up-to-date peer reviewed journals
- 5. Apply advanced psychomotor skills to adjustment set-ups and thrusts for spinal and peripheral joints.

From the Council of Chiropractic Education Australasia: Competency based Standards for Entry Level Chiropractors: Learning outcomes 2 and 4: Standard 6: Patient Assessment. 6.1: Obtains and records patient history, 6.2: Performs a thorough physical examination, performs a thorough neuromusculoskeletal examination, 6.7, effectively deals with patients referred by another health care provide or an agency. Standard 7: Establishes differential and working diagnoses from the information required.

Learning Outcomes 3, 5 and 6: Standard 8: Planning of Patient Care: 8.1 Bases patient management plans on adequate diagnostic data 8.3 Designs an appropriate patient management plan, 8.4 Considers safety in patient care. Learning Outcomes 1: Standard 7: Diagnostic Decision Making 7.1.; Establishes differential and working diagnosis from the information required. 7.2 Collaborates and refers as necessary to obtain expert opinion.

Alignment of Learning Outcomes, Assessment and Graduate Attributes Intermediate Introductory Graduate | Professional Advanced Level Level Level Alignment of Assessment Tasks to Learning Outcomes **Assessment Tasks Learning Outcomes** 1 2 3 5 1 - Portfolio - 20% 2 - Practical Assessment - 50% 3 - Examination - 30% Alignment of Graduate Attributes to Learning Outcomes **Graduate Attributes Learning Outcomes** 1 2 5 1 - Communication 2 - Problem Solving 3 - Critical Thinking 4 - Information Literacy 5 - Team Work

Graduate Attributes			Learning Outcomes								
			1		2	3	3	4		5	
7 - Cross Cultural Competence							•	•		•	
8 - Ethical practice					•		•	•		•	
9 - Social Innovation											
10 - Aboriginal and Torres Strait Islande	er Cultures										
10 - Aboriginal and Torres Strait Islande	er Cultures										
10 - Aboriginal and Torres Strait Islande		tribu	tes								
-	s to Graduate At	tribu Gradu		ribut	es						
lignment of Assessment Tasks	s to Graduate At		ate Ati	ribut 4	es 5	6	7	8	9	10	
lignment of Assessment Tasks	s to Graduate At	Gradu	ate Ati			6	7	8	9	10	
lignment of Assessment Tasks	s to Graduate At	Gradu 1 2	ate Ati	4		6			9	10	

Textbooks and Resources

Textbooks

CHIR13008

Prescribed

Chiropractic Technique: Principles and Procedures.

Edition: Third (2010)

Authors: Bergman TF, Peterson DH

Elsevier

St. Louis, Missouri, , United States of America

ISBN: 978-0-323-04969-6 Binding: Hardcover

CHIR13008

Prescribed

Differential Diagnosis for the Chiropractor Protocols and Algorithms.

Edition: Fifth (2014) Authors: Souza T.A

Jones and Bartlett Learning

Burlington, MA, United States of America

ISBN: 978-1-284-02230-8 Binding: Hardcover

CHIR13008

Supplementary

Orthopaedic Physical Assessment Atlas and Video. Selected Special tests and Movements

Edition: First (2011) Authors: Magee D.J

Elsevier

St. Louis, Missouri, United States of America

ISBN: 978-1-4377-1603-0 Binding: Paperback CHIR13008

Supplementary

Quick Reference. Evidence Informed Orthopaedic Conditions

Edition: Third (2018) Authors: Vizniak N.K.

Prohealth. Professional Health Systems

ISBN: 978-0993619175 Binding: Paperback

Additional Textbook Information

Copies of all texts can be purchased at the CQUni Bookshop here: http://bookshop.cqu.edu.au (search on the Unit code)

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

All submissions for this unit must use the referencing style: <u>American Psychological Association 6th Edition (APA 6th edition)</u>

For further information, see the Assessment Tasks.

Teaching Contacts

Dawn Dane Unit Coordinator d.dane@cqu.edu.au

Schedule

Week 1 - 11 Mar 2019

Module/Topic

Lectures (including zoom sessions) and tutorials. Refer to the workbook.

- Unit profile, assessment expectations for the practical, written assessment and the portfolio.
- The diagnostic triage.
- General approach to musculoskeletal (MSK) testing.
- Red and yellow flags of musculoskeletal pain.
- Anatomy of the 3 joint complex.
- 3 phases of degeneration.
- What is evidence based practice.

Technique: Practical skills 2X2 hours practical sessions.

• Spinal manipulative techniques and GORP.

Chapter

Resources and readings will be given via Moodle
Differential Diagnosis and
Management for the
Chiropractor, Protocols and
Algorithms, Souza, Thomas 5th
Edition. Jones and Bartlett
learning 2016, Read page 22
(general approach to MSK
testing). Page 174 and 176. ('Red
flag's in MSK pain). Page 165
(the 3 joint complex).

Events and Submissions/Topic

Answer week 1 (found in the workbook) by March 13, 2019. All workbook activities must be uploaded to the Weebly portfolio.

Week 2 - 18 Mar 2019

Module/Topic

Lectures (including zoom session) and tutorials. Refer to the workbook.

- Clinical evaluation of pain (pathophysiology of pain, simple (complicated) versus complex (uncomplicated)
- Case history taking: Introduction and application.
- Physical examination GORPOMNICS: What does this stand for?
- Cervical musculoskeletal testing including sensitivity and specificity.

Technique: Practical skills 2X2 hours practical sessions.

 Spinal orthopedics and manipulative techniques and GORP.

Chapter

Resources and readings will be given via Moodle. Differential diagnosis and management for the chiropractor 5th Ed. Barlett and Jones. Read pages 8 and 9 on referred pain.

Events and Submissions/Topic

Answer week 2 (found in the workbook) by March 20th, 2019

Week 3 - 25 Mar 2019

Module/Topic

Chapter

Events and Submissions/Topic

Lectures (including zoom session) and tutorials. Refer to the workbook.

- Making a diagnosis and clinical impression (working diagnosis).
- How to develop a 'tissue in lesion', prognosis and likely diagnosis.
- Report of findings (ROF). What is it and how is this performed?
- Introduction to clinical reasoning. How to make a differential diagnosis.
- Lumbar musculoskeletal testing (including sensitivity and specificity).

Technique: Practical skills 2X2 hours practical sessions.

 Spinal orthopedics and manipulative techniques and GORP. Resources and readings will be given via Moodle.

Answer week 3 (found in the workbook) by March 27th, 2019.

Week 4 - 01 Apr 2019

Module/Topic Chapter **Events and Submissions/Topic** Lectures (including zoom session) and tutorials. Refer to the workbook. Review, reflection and catch-up. No new material for this week Technique: Practical skills 2X2 No readings for this week. No questions for week 4. hours practical sessions. Spinal orthopedics and manipulative techniques and GORP. · Mock OSCE for feedback. Week 5 - 08 Apr 2019

Module/Topic Chapter Events and Submissions/Topic

Lectures (including zoom session) and tutorials. Refer to the workbook.

 Musculoskeletal Condition 1 'simple pain condition'.

Myofascial pain syndrome.

- Review anatomy and biomechanics associated with this condition. Clinical signs and symptoms in addition to pathomechanics.
- Stages of ligamentous healing. given via Moodle.
- Thoracic MSK testing (specificity and sensitivity).
- Case study 1.

Technique: Practical skills 2X2 hours practical sessions.

- Spinal orthopedic and manipulative techniques and GORP.
- · Rib motion and static palpation.

Resources and readings will be

Answer week 5 questions (found in workbook) April 10th, 2019.

Submit: oncampus activity checklist via Moodle

Vacation Week - 15 Apr 2019

Module/Topic

Chapter

Events and Submissions/Topic

Events and Submissions/Topic

Week 6 - 22 Apr 2019

Module/Topic

Lectures (including zoom session) and tutorials. Refer to the workbook.

- Musculoskeletal Condition 2 simple pain condition'. Facet syndrome in the cervical/thoracic and lumbar spines (synovitis and capsulitis).
- Review anatomy and biomechanics associated with this condition. Clinical signs and symptoms in addition to pathomechanics.
- Case study 2 Technique: Practical skills 2X2 hours practical sessions.
- Spinal orthopedic and manipulative techniques and GORP.
- Rib motion and static palpation.
- Gait examination

Chapter

Resources and readings will be given via Moodle. Differential diagnosis and

5th Ed. Bartlett and Jones.Read page 104 on Facet syndrome of the cervical spine. Page 167 and 168. Read page 214 on Facet

syndrome.

management for the chiropractor Answer week 6 questions (found in the workbook) by April 24th, 2019

Week 7 - 29 Apr 2019

Module/Topic

Chapter

Events and Submissions/Topic

Lectures (including zoom session) and tutorials. Refer to the workbook.

- Musculoskeletal Condition 1 'simple pain condition', from the sacro-iliac joint, hip and coccyx.
- Review anatomy and biomechanics associated with this condition. Clinical signs and symptoms in addition to pathomechanics.
- Case studies 3 and 4. Technique: Practical skills 2X2 hours practical sessions.
- Spinal orthopedic and manipulative techniques and GORP.
- Practice cards for final OSCE

Resources and readings will be given via Moodle. Differential Diagnosis and management for the chiropractor. 5th Ed. Bartlett Answer week 7 guestions (found and Jones Learning. Read page 169 on the sacro-iliac joint. Page May, 2019 391 - 404 on the hip joint. Read page 216 on Sacroiliac sprain and subluxation.

in the workbook) by the 1st of

Week 8 - 06 May 2019

Module/Topic **Events and Submissions/Topic** Chapter

Lectures (including zoom session) and tutorials. Refer to the workbook.

· Review, reflection and catch-up (no new material)

Technique: Practical skills 2X2 hours practical sessions.

- Spinal orthopedic and manipulative techniques and GORP.
- Practice cards for final OSCE.

No readings for this week No questions for this week.

Week 9 - 13 May 2019

Module/Topic Chapter **Events and Submissions/Topic**

Lectures (including zoom session) and tutorials. Refer to the workbook.

- Musculoskeletal Condition 4: Simple pain: Scoliosis
- Review anatomy and biomechanics associated with this condition. Clinical signs and symptoms in addition to pathomechanics.
- Case studies 5 Technique: Practical skills 2X2 hours practical sessions. Spinal orthopedic and
- Practice cards for final OSCE

manipulative techniques and

Resources and readings will be given via Moodle. Differential Diagnosis and management for and Jones Learning. Read page 135 to 156 on Scoliosis.

Answer week 9 questions (found the chiropractor. 5th Ed. Bartlett in the workbook) by 15th of May, 2019.

Week 10 - 20 May 2019

GORP.

Module/Topic Chapter **Events and Submissions/Topic** Lectures (including zoom session) and tutorials. Refer to the workbook.

- Musculoskeletal Condition 5 Simple pain: Spondylolisthesis and spondylolysis.
- Review anatomy and biomechanics associated with this condition. Clinical signs and symptoms in addition to pathomechanics.
- Case study 6 Technique: Practical skills 2X2 hours practical sessions.
- Spinal orthopedic and manipulative techniques and GORP.
- Practice cards for final OSCE

Resources and readings will be given via Moodle. Differential diagnosis and management for the chiropractor 5th Ed. Bartlett and Jones.. Read pages 215 and 216 on Spondylolisthesis.

Answer week 10 questions (found in the workbook) by the 22nd May, 2019.

Work Book and Reflection Due: Week 10 Wednesday (22 May 2019) 10:00 pm AEST

Week 11 - 27 May 2019 Module/Topic **Events and Submissions/Topic** Chapter Lectures (including zoom session) and tutorials. Refer to the workbook. · Review, reflection and catch-up (no new material) Answer practice exam Technique: Practical skills 2X2 No readings for this week hours practical sessions. Submit oncampus activity Spinal orthopedic and checklist via Moodle manipulative techniques and GORP. • Practice cards for final OSCE. Mock OSCE

Week 12 - 03 Jun 2019

Module/Topic Chapter **Events and Submissions/Topic** Final OSCE is scheduled in this Final OSCE is scheduled in this week. week. Lectures (including zoom session) and tutorials. Refer to No readings for this week. the workbook. **Practical Assessments** Due: Week · Review, reflection and catch-12 Friday (7 June 2019) 5:00 pm AEST up (no new material) Review/Exam Week - 10 Jun 2019 Module/Topic Chapter **Events and Submissions/Topic** Exam Week - 17 Jun 2019 Module/Topic Chapter **Events and Submissions/Topic**

Term Specific Information

Kenneth Lorme - k.lorme@cqu.edu.au

Assessment Tasks

1 Work Book and Reflection

Assessment Type

Portfolio

Task Description

Part A

Each week where there is a requirement to complete a component of the workbook, it is expected that you will upload the information to your weebly portfolio. This task will assist you to keep up with your studies across the term.

Part B

This task will allow you to work in a team of approximately four students to explore and then demonstrate evidence-based clustering of orthopaedic testing. You will be required to first explore the evidence behind your chosen tests and compare the cluster that you selected against other options to evaluate a condition. Then, as a group, you will demonstrate the testing of your cluster. Your group will then reflect on the positives and negatives of such clustering. Your final product will be in the form of a video lasting 6-10 minutes which will be uploaded to your website (Weebly). The video will be supported with a bibliography of references to support the student's choice of clustering.

Assessment Due Date

Week 10 Wednesday (22 May 2019) 10:00 pm AEST via Moodle

Return Date to Students

Week 12 Wednesday (5 June 2019) via Moodle

Weighting

20%

Minimum mark or grade

50%

Assessment Criteria

Assessment Criteria:

Part A

It is expected that all weekly workbook tasks will be uploaded to the weebly portfolio. All components of the workbook tasks are required to be completed and correct.

Part B

It is expected that students will identify a cluster of testing that is relative to chiropractic diagnosis. Students should be able to identify appropriate literature and research to demonstrate their understanding of the importance of accurate diagnosis and how testing sensitivity and specificity can be used to deliver a more accurate way to diagnosis.

Referencing Style

American Psychological Association 6th Edition (APA 6th edition)

Submission

Online

Learning Outcomes Assessed

- Discuss chiropractic management approaches within the context of the Australian Health care system.
- Critically analyse and reflect on relevant sources of information relating to neuomusculoskeletal diagnosis including those from reliable, appropriate, up-to-date peer reviewed journals

Graduate Attributes

- Communication
- Information Literacy
- Cross Cultural Competence

Ethical practice

2 Practical Assessments

Assessment Type

Practical Assessment

Task Description

In practice, the chiropractor is required to combine a variety of psychomotor skills. All skills/techniques taught within this unit must be mastered. You must have a strong understanding of their applications. The primary focus of this assessment will be on the contextual nature of the adjustment/manipulation in addition to refining the skill itself.

Part A - oncampus activity

There will be weekly on-campus activities that account for 10% of the available 50% of this assessment. The weekly on-campus activities will involve participation in set tasks during your normal lab time. It will be your responsibility to have the on-campus activity checklist (this is available on Moodle) signed by the tutor on the day of the activity. You will be required to upload this document via Moodle at the end of week 5 and again at the end of week 11.

Part B - Week 12 OSCE

The practical assessment will take place in week 12 and will involve a number of OSCE type stations, it will account for 40% of the available 50% for this assessment. OSCE practice cards will be released in Week 7 to allow plenty of preparation time.

Assessment Due Date

Week 12 Friday (7 June 2019) 5:00 pm AEST The OSCE will be scheduled on the timetable in week 12.

Return Date to Students

Review/Exam Week Friday (14 June 2019) Grades will be released via Moodle.

Weighting

50%

Minimum mark or grade

50% for both part A and B

Assessment Criteria

Part A - students are expected to participate in and complete each oncampus activity. It is the responsibility of the student to attend and participate in the weekly oncampus activitie. Upon completion of the activity students should request that the tutor sign their oncampus activity checklist (available on Moodle) as proof of participation.

Part B - Students will need to apply past knowledge (Observation/PA, A/P ROM, and static and motion palpation) to demonstrate the early stages of the GORP OMNI examination and further demonstrate new skills associated with adjustments/manipulative techniques (attention will be paid in particular to practitioner position, patient handling/position and application of appropriate adjustments)

Referencing Style

American Psychological Association 6th Edition (APA 6th edition)

Submission

Online

Learning Outcomes Assessed

• Apply advanced psychomotor skills to adjustment set-ups and thrusts for spinal and peripheral joints.

Graduate Attributes

- Information Literacy
- Team Work

- Cross Cultural Competence
- Ethical practice

Examination

Outline

Complete an invigilated examination.

Date

During the examination period at a CQUniversity examination centre.

Weighting

30%

Length

120 minutes

Exam Conditions

Closed Book.

Materials

Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?

For academic advice and guidance, the <u>Academic Learning Centre (ALC)</u> can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?



Be Honest

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own



Seek Help

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)



Produce Original Work

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem