KING'S OWN INSTITUTE*
Success in Higher Education

ICT726 WEB DEVELOPMENT T325 BRIEF

All information in the Subject Outline is correct at the time of approval. KOI reserves the right to make changes to the Subject Outline if they become necessary. Any changes require the approval of the KOI Academic Board and will be formally advised to those students who may be affected by email and via Moodle.
Information contained within this Subject Outline applies to students enrolled in the trimester as indicated

1. General Information

1.1 Administrative Details

Associated HE Award(s)	Duration	Level	Subject Coordinator
Master of Information Technology (MIT) Graduate Diploma of Information Technology (GDIT)	1 trimester	Postgraduate	Dr Rekha Nachiappan rekha.nachiappan@koi.edu.au P: +61 (2) 9283 3583 L: 7-11, 11 York Street. Consultation: via Moodle or by appointment.

1.2 Core/Elective

This subject is
o   an elective subject for the Master of Information Technology (MIT)
o   an elective subject for the Graduate Diploma of Information Technology (GDIT)

1.3 Subject Weighting

Indicated below is the weighting of this subject and the total course points

Subject Credit Points	Total Course Credit Points
4	MIT (64 Credit Points); GDIT (32 Credit Points)

1.4 Student Workload

Indicated below is the expected student workload per week for this subject

No. Timetabled Hours/Week*	No. Personal Study Hours/Week**	Total Workload Hours/Week***
3 hours/week plus supplementary online material	7 hours/week	10 hours/week

*   Total time spent per week at lectures and tutorials
**   Total time students are expected to spend per week in studying, completing assignments, etc.
***   Combination of timetable hours and personal study

1.5 **Mode of Delivery**   Classes will be face-to-face or hybrid. Certain classes will be online (e.g., special arrangements).

1.6 **Pre-requisites**   ICT711 Programming and Algorithms

1.7   General Study and Resource Requirements

o   Students are expected to attend classes with the weekly worksheets and subject support material provided in Moodle. Students should read this material before coming to class to improve their ability to participate in the weekly activities.
o   Students will require access to the internet and their KOI email and should have basic skills in word processing software such as MS Word, spreadsheet software such as MS Excel and visual presentation software such as MS PowerPoint.
o   Computers and WIFI facilities are extensively available for student use throughout KOI. Students are encouraged to make use of the campus Library for reference materials.

Software resource requirements specific to this subject: Office 365, MS Imagine, VS code, PHP, MySQL, XAMPP.

1.8 Academic Advising

Academic advising is available to students throughout teaching periods including the exam weeks. As well as requesting help during scheduled class times, students have the following options:
o   Consultation times: A list of consultation hours is provided on the homepage of Moodle where appointments can be booked.
o   Subject coordinator: Subject coordinators are available for contact via email. The email address of the subject coordinator is provided at the top of this subject outline.
o   Academic staff: Lecturers and Tutors provide their contact details in Moodle for the specific subject. In most cases, this will be via email. Some subjects may also provide a discussion forum where questions can be raised.
o   Head of Program: The Head of Program is available to all students in the program if they need advice about their studies and KOI procedures.
o   Vice President (Academic): The Vice President (Academic) will assist students to resolve complex issues (but may refer students to the relevant lecturers for detailed academic advice).

2. Academic Details

2.1 Overview of the Subject

The subject introduces students to the development of interactive and dynamic websites and web applications. Students will gain practical experience in creating web pages using HTML, CSS, web media, and web forms, while also handling error checking and validating user inputs. The subject further explores the creation of functional, data-driven websites that comply with accessibility, usability, privacy, ethical, and other web standards.

Students will also implement server-side authentication and access control, ensuring the security and functionality of web applications. The course encourages critical evaluation of content management systems (CMS) and teaches the application of Search Engine Optimization (SEO) techniques to improve website visibility. By the end of the subject, students will possess the necessary skills to design dynamic, functional, and standards-compliant websites.

2.2 Graduate Attributes for Postgraduate Courses

Graduates of postgraduate courses from King's Own Institute will gain the graduate attributes expected from successful completion of a postgraduate degree under the Australian Qualifications Framework (2nd edition, January 2013). Graduates at this level will be able to apply advanced body of knowledge in a range of contexts for professional practice or scholarship and as a pathway for further learning.

King's Own Institute's key generic graduate attributes for a postgraduate degree are summarised below:

|	KOI Postgraduate Degree Graduate Attributes	Detailed Description
	Knowledge	Current, comprehensive and coherent knowledge, including recent developments and applied research methods
	Critical Thinking	Critical thinking skills to identify and analyse current theories and developments and emerging trends in professional practice
	Communication	Communication and technical skills to analyse and theorise, contribute to professional practice or scholarship, and present ideas to a variety of audiences
	Research and Information Literacy	Cognitive and technical skills to access and evaluate information resources, justify research approaches and interpret theoretical propositions
	Creative Problem Solving Skills	Cognitive, technical and creative skills to investigate, analyse and synthesise complex information, concepts and theories, solve complex problems and apply established theories to situations in professional practice
	Ethical and Cultural Sensitivity	Appreciation and accountability for ethical principles, cultural sensitivity and social responsibility, both personally and professionally
	Leadership and Strategy	Initiative, leadership skills and ability to work professionally and collaboratively to achieve team objectives across a range of team roles Expertise in strategic thinking, developing and implementing business plans and decision making under uncertainty
	Professional Skills	High level personal autonomy, judgement, decision-making and accountability required to begin professional practice

Across the courses, these skills are developed progressively at three levels:

o **Level 1 Foundation –** Students learn the skills, theories and techniques of the subject and apply them in stand-alone contexts
o **Level 2 Intermediate –** Students further develop skills, theories and techniques of the subject and apply them in more complex contexts, beginning to integrate the application with other subjects
o **Level 3 Advanced** – Students have a demonstrated ability to plan, research and apply the skills, theories and techniques of the subject in complex situations, integrating the subject content with a range of other subject disciplines within the context of the course

Generally, skills gained from subjects in the Graduate Certificate and Graduate Diploma are at levels 1 and 2 while other subjects in the Master's degree are at level 3.

2.3 Subject Learning Outcomes

Listed below, are key knowledge and skills students are expected to attain by successfully completing this subject:

Subject Learning Outcomes	Contribution to Course Graduate Attributes
a) Create web pages which demonstrate a working knowledge of HTML, CSS, web media, web forms, error handling, and	

	validation of user input	
b)	Create and demonstrate functional and usable data-driven web sites which comply with accessibility, usability, privacy, ethical, and other web standards	
c)	Implement server-side authentication and access control to a web application	
d)	Critically evaluate the use of content management systems	
e)	Apply Search Engine Optimisation (SEO) techniques to increase organic traffic	

2.4 Subject Content and Structure

Below are details of the subject content and how it is structured, including specific topics covered in lectures and tutorials. Reading refers to the text unless otherwise indicated.

Weekly Planner:

Week (beginning)	Topic covered in each week's lecture	Reading(s)	Expected work as listed in Moodle
Week 1 27 Oct	Introduction to web development and HTML	Ch. 1, 3, 5 and 6 (Connolly & Hoar, 2021)	HTML tutorial exercises including layout and using rich media Summative graded
Week 2 03 Nov	Cascading styles sheets (CSS) and modern responsive design	Ch. 4 and 7 (Connolly & Hoar, 2021)	Tutorial exercise on CSS and responsive design Summative graded
Week 3 10 Nov	Ethical Web Principles and Accessibility	Ethical Web Principles (W3C) (Clio Websites, 2021)	Tutorial exercise on ethical web design and accessibility Summative graded
Week 4 17 Nov	JavaScript fundamentals. Document Object Model (DOM)	Ch. 8 and 9 (Connolly & Hoar, 2021)	JavaScript tutorial exercises Summative graded
Week 5 24 Nov	Extending JavaScript – jQuery, AJAX	Ch. 10 (Connolly & Hoar, 2018)	Tutorial exercises using jQuery and AJAX Summative graded **Assessment 2: Quiz 1**

Week (beginning)	Topic covered in each week's lecture	Reading(s)	Expected work as listed in Moodle
Week 6 01 Dec	Server-side development with PHP	Ch. 11 (Connolly & Hoar, 2018) Ch. 12 (Connolly & Hoar, 2021)	PHP tutorial exercises Summative graded
Week 7 08 Dec	PHP Classes and Objects	Ch. 13 (Connolly & Hoar, 2018)	PHP Object-Oriented tutorial Summative graded **Assessment 3 due**
Week 8 15 Dec	MySQL database access and managing state	Ch. 14 and 16 (Connolly & Hoar, 2018) Ch. 14 and 15 (Connolly & Hoar, 2021)	MySQL tutorial exercises Summative graded
Week 9 05 Jan	Error handling and validation. Search Engine Optimisation	Ch. 15 and 23 (Connolly & Hoar, 2018)	Tutorial exercises on error handling and validation and SEO Summative graded **Assessment 2: Quiz 2**
Week 10 12 Jan	Web security and Data privacy regulations	Ch. 18(Connolly & Hoar, 2018) Ch 16 (Connolly & Hoar, 2021) GDPR	Web Security related questions Summative graded
Week 11 19 Jan	Web Server and Content management Systems	Ch. 21 and 22 (Connolly & Hoar, 2018)	**Assessment 4 Report due** Formative not graded
Week 12 27Jan (Tue)	Modern Web Development- React + Node.js	Ch 20 and 21 (Nixon, R 2025)	Tutorial exercise on React and Node.js **Assessment 4 Demonstrations due**
Week 13 02 Feb	Study review week and Final Exam Week		
Week 14 09 Feb	Examinations Continuing students - enrolments for T126 open		Please see exam timetable for exam date, time and location

Week (beginning)	Topic covered in each week's lecture	Reading(s)	Expected work as listed in Moodle
Week 15 16 Feb	Student Vacation begins New students - enrolments for T126 open		
Week 16 23 Feb	● Results Released ● Review of Grade Day for T325 – see Sections 2.6 and 3.2 below for relevant information. ● Certification of Grades NOTE: More information about the dates will be provided at a later date through Moodle/KOI email.		
T126 2 Mar 2026			
Week 1 02 Mar	Week 1 of classes for T126		

2.5 Teaching Methods/Strategies

Briefly described below are the teaching methods/strategies used in this subject:

- *On-campus lectures* (2 hours/week) are conducted in seminar style and address the subject content, provide motivation and context and draw on the students' experience and preparatory reading.
- *Tutorials* (2 hours/week) include class discussion of case studies and research papers, practice sets and problem-solving and syndicate work on group projects. Tutorial participation is an essential component of the subject and contributes to the development of graduate attributes (see section 2.2 above). It is intended that specific tutorial material such as case studies, recommended readings, review questions etc. will be made available each week in Moodle.
- *Online* teaching resources include class materials, readings, model answers to assignments and exercises and discussion boards. All online materials for this subject as provided by KOI will be found in the Moodle page for this subject. Students should access Moodle regularly as material may be updated at any time during the trimester
- *Other contact* - academic staff may also contact students either via Moodle messaging, or via email to the email address provided to KOI on enrolment.

2.6 Student Assessment

Assessment is designed to encourage effective student learning and enable students to develop and demonstrate the skills and knowledge identified in the subject learning outcomes. Assessment tasks during the first half of the study period are usually intended to maximise the developmental function of assessment (formative assessment). These assessment tasks include weekly tutorial exercises (as indicated in the weekly planner) and low stakes graded assessments (as shown in the graded assessment table). The major assessment tasks where students demonstrate their knowledge and skills (summative assessment) generally occur later in the study period. These are the major graded assessment items shown in the graded assessment table.

Final grades are awarded by the Board of Examiners in accordance with KOI's Assessment and Assessment Appeals Policy. The definitions and guidelines for the awarding of final grades are:

- *HD High distinction* (85-100%): an outstanding level of achievement in relation to the assessment process.
- *D Distinction* (75-84%): a high level of achievement in relation to the assessment process.
- *C Credit* (65-74%): a better than satisfactory level of achievement in relation to the assessment process.
- *P Pass* (50-64%): a satisfactory level of achievement in relation to the assessment process.
- *F Fail* (0-49%): an unsatisfactory level of achievement in relation to the assessment process.

o *FW:* This grade will be assigned when a student did not submit any of the compulsory assessment items.

Provided below is a schedule of formal assessment tasks and major examinations for the subject.

Assessment Type	When Assessed	Weighting	Learning Outcomes Assessed
Assessment 1: Weekly Tutorials	Week 1 – Week 10	20% (2% per week)	a, b, c, d, e
Assessment 2: Quizzes	Week 5 and Week 9	10%	a, b, c, d
Assessment 3: Static website - Individual	Week 7	35%	a, b
Assessment 4: Dynamic website - Group	Report: Week 11 Demonstration: Week 12	Website 20% Demonstration 10% Individual contribution 5%	a, b, c, e

Requirements to Pass the Subject:

To gain a pass or better in this subject, students must gain a *minimum of 50%* of the total available subject marks.

2.7 Prescribed and Recommended Readings

Provided below, in formal reference format, is a list of the prescribed and recommended readings.

Prescribed Texts:

Connolly, R., & Hoar, R. 2021. *Fundamentals of Web Development* 3rd Edition. Pearson.

Connolly, R., & Hoar, R., 2018. *Fundamentals of Web Development*, 2nd ed. Pearson

Recommended readings:

Nixon, R. 2025. Learning PHP, MySQL & JavaScript: A Step-by-Step Guide to Creating Dynamic Websites, 7th ed. O'Reilly Media.

Schwarzmüller, M. 2025. React key concepts: an in-depth guide to react's core features, 2nd edition. Packt Publishing.

Aladi, C.C., 2024. Web Application Security: A Pragmatic Exposé. Digital Threats: Research and Practice.

Stauffer, M., 2023. Laravel: Up & running: A framework for building modern Php Apps. 3rd ed. O'Reilly Media.

Visser, C. 2023. A detailed guide to WCAG compliance in 2023, Accessibility Checker. Research by H. Ilyas. Available at: https://www.accessibilitychecker.org/guides/wcag/ (Accessed: 07 August 2023).

Powers, D., 2022. *PHP 8 Solutions: Dynamic Web Design and Development Made Easy*. 5th ed. New York: Apress.

Kundariya, H., 2024. 11 Web Development Trends to Expect in 2024, According to Experts & Data,, HubSpot Blog. Available at: https://blog.hubspot.com/website/web-development-trends .

Olsson, M., 2021. *PHP 8 quick scripting reference: A pocket guide to PHP web scripting*. 3rd ed. New York: Apress.

Ranjan, A., Sinha, A. and Battewad, R., 2020. JavaScript for modern web development: building a web application using HTML, CSS, and JavaScript. BPB Publications.

Busuioc, A. et al., 2019. *The PHP workshop: A new, interactive approach to learning PHP*, Birmingham, England: Packt Publishing Ltd.

Coulson, L. et al., 2019. *The HTML and CSS workshop: A new, interactive approach to learning HTML and CSS*, Birmingham: Packt Publishing Ltd.

Labrecque, J., 2019. *The JavaScript workshop: A new, interactive approach to learning JavaScript*, Birmingham, UK: Packt Publishing Ltd.

Mukkamala, K., 2018, *Hands -On Data Structures and Algorithms with JavaScript*, Packt publishing

Boehm, A., Ruvalcaba, Z., 2018, *Murach's HTML5 and CSS3*, 4th ed., Murach and Associates.

Unicorn Platform., 2024. *The future of AI and web development*. https://unicornplatform.com/blog/the-future-of-ai-and-web-development/

Kirkpatrick, A. (no date) Web content accessibility guidelines (WCAG) 2.2, W3C. Edited by C. Adams et al. Available at: https://www.w3.org/TR/WCAG22/ (Accessed: 07 August 2023).

Schwarz, D. 2023 The Designer's Guide to Figma Master Prototyping, collaboration, handoff, and Workflow. La Vergne: SitePoint.

Nixora Group, 2020. *EU FTA Submission*. Available at: https://www.dfat.gov.au/sites/default/files/nixora-group-eufta-submission.pdf

GDPR-Info.eu, n.d. *General Data Protection Regulation (GDPR)*. Available at: https://gdpr-info.eu/

Australian Computer Society (ACS), 2014. *Code of Professional Conduct* (v2.1). Available at: https://www.acs.org.au/content/dam/acs/rules-and-regulations/Code-of-Professional-Conduct_v2.1.pdf

Suggested Periodicals:

o   ACM Transactions on the Web: https://tweb.acm.org/
o   International Journal of Web Engineering and Technology: https://www.inderscience.com/jhome.php?jcode=ijwet
o   Journal of Web Development and Web Designing: http://matjournals.com/Journal-of-Web-Development-and-Web-Designing.html

Useful Websites:

The following industry websites are useful introductory sources covering a range of information useful for this subject.

o   W3Schools https://www.w3schools.com/
o   Web Design Standards https://www.orbitmedia.com/blog/web-design-standards/
o   World Wide Web Consortium (W3C) https://www.w3.org/
o   World Wide Web Consortium (W3C) Australia http://w3c.org.au/

- Harbottle, P. (2023) *Website accessibility laws in Australia: Legal guidelines*, *Recite Me*. Available at: https://reciteme.com/au/news/understanding-website-accessibility-laws-in-australia/
- AI in Web Development: https://litslink.com/blog/using-ai-for-web-development
- AI Tools Transforming Web Development: https://www.digitalocean.com/resources/article/ai-tools-web-development
- The guide to responsive web design in 2024 : https://webflow.com/blog/responsive-web-design
- The beginner guide to responsive design: https://kinsta.com/blog/responsive-web-design/
- Clio Websites, 2021. *Ethical principles in web design*. Available at: https://cliowebsites.com/ethical-principles-in-web-design/
- W3C, 2020. Ethical web principles. Available at: https://www.w3.org/TR/ethical-web-principles/

Conference/ Journal Articles:

Students are encouraged to read peer reviewed journal articles and conference papers. Google Scholar provides a simple way to broadly search for scholarly literature. From one place, you can search across many disciplines and sources: articles, theses, books, abstracts and court opinions, from academic publishers, professional societies, online repositories, universities and other web sites.