

109 學年元智大學電機工程學系 教育目標與核心能力

109.05.29 電機通訊學院一〇八學年度第十四次院系主管會議修訂通過

109.06.17 一〇八學年度第七次教務會議修訂通過

學制	類別	IEET 規範	1090529 修訂
大學部	教育目標		<p>培養國家建設與發展所具競爭力之電機工程人才，採用下列教育目標，貫徹執行專業課程的教學工作。</p> <ol style="list-style-type: none"> 1. 建立電機與資訊之堅實科學理論知識。 2. 使學生能具備分析、設計電機、電子、資訊和系統軟硬體之實務經驗。 3. 掌握產業脈動，課程規劃與時俱進，培養國家建設與高科技發展人才。 4. 提升學生人文素養、專案管理、團隊合作能力，以啟發其潛在之領導力。 5. 使學生建立國際觀與終身學習的態度與能力。
	學生核心能力	<ol style="list-style-type: none"> 1. 運用數學、科學及工程知識的能力。 2. 設計與執行實驗，以及分析解釋數據的能力。 3. 執行工程實務所需技術、技巧及使用現代工具的能力。 4. 設計工程系統、元件或製程的能力。 5. 專案管理（含經費規劃）、有效溝通、領域整合與團隊合作的能力。 6. 發掘、分析、應用研究成果及因應複雜且整合性工程問題的能力。 7. 認識時事議題，瞭解工程技術對環境、社會及全球的影響，並培養持續學習的習慣與能力。 8. 理解及應用專業倫理，認知社會責任及尊重多元觀點。 	<ol style="list-style-type: none"> 1. 運用數學、科學及工程知識的能力。 2. 設計與執行實驗，以及分析解釋相關數據的能力。 3. 執行電機資訊工程實務所需技術、技巧及使用現代工具的能力。 4. 設計電機資訊工程系統、元件或製程的能力。 5. 專案管理（含經費規劃）、有效溝通、領域整合與團隊合作的能力。 6. 發掘、分析、應用研究成果及因應複雜且整合性工程問題的能力。 7. 關注時事資訊，瞭解電機資訊工程技術對環境、社會及全球的影響，並培養持續學習的習慣與能力。 8. 理解及應用專業倫理，認知社會責任及尊重多元觀點，成為具有人文特質之專業工程人才。

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研究所 (含 碩、博 士班、 碩士在 職專 班)	教育 目標		<p>為培養學生成為具有獨立研究、團隊合作與計畫達成能力之電機工程人才，採用以下教育目標，貫徹執行專業領域的研究訓練工作。</p> <ol style="list-style-type: none"> 1. 教育學生具備電機專業領域知識，以為創新研發之基礎。 2. 培養學生具備活用電機與資訊知能，使其能獨立針對特定議題深入探討與思考解決之道。 3. 訓練學生從事研究議題之規劃執行、溝通表達與論文撰寫之能力，為國家建設培養高科技發展人才。 4. 提升學生學術倫理素養、溝通協調與團隊合作精神，以啟發其務實及規劃管理能力。 5. 培養學生具有國際觀與終身自我學習能力之高級專業人才。
	學生 核心 能力	<ol style="list-style-type: none"> 1. 特定領域的專業知識。 2. 策劃及執行專題研究的能力。 3. 撰寫專業論文的能力。 4. 創新思考及獨立解決問題的能力。 5. 與不同領域人員協調整合的能力。 6. 良好的國際觀。 7. 領導、管理及規劃的能力。 8. 終身自我學習成長的能力。 	<ol style="list-style-type: none"> 1. 具備電機資訊工程領域的專業知識。 2. 策劃及執行專題研究的能力。 3. 專業論文撰寫及簡報的能力。 4. 創新思考及獨立解決問題的能力。 5. 與不同專業領域人員協調整合的能力。 6. 良好的國際觀。 7. 領導、管理及規劃的能力。 8. 關注時事資訊，培養終身自我學習的能力。

Yuan Ze University College of Electrical and Communication Engineering
Educational Objectives and Core Competencies

* Description: This topic is based on the consolidation of the three programs in the Department of Electrical Engineering, and the combination of the three programs' characteristics into the future direction for the department.

Level	Type	Revision
Undergraduate	Educational Objectives	<p>To nurture competitive electrical engineering personnel for national infrastructure and development, the following educational objectives are adopted to implement the teaching of professional courses.</p> <ol style="list-style-type: none"> 1. To build a solid scientific theoretical knowledge of electrical engineering and information; 2. To equip students with practical experience in the analysis and design of electrical, electronic, information and systems software and hardware; 3. To keep abreast of industry trends and keep the curriculum up-to-date to cultivate talents for national infrastructure and high-tech development; 4. To enhance students humanities, project management and teamwork skills in order to inspire their potential leadership; 5. To enable students to foster an international perspective and lifelong learning attitude and skills.
	Student core competencies	<ol style="list-style-type: none"> 1. Ability to apply mathematical, scientific and engineering knowledge; 2. Ability to design and perform experiments and to analyze and interpret relevant data; 3. Skills, techniques required to perform electrical and information engineering practices and the ability to use modern tools; 4. Ability to design electrical and information engineering systems, components or processes; 5. Project management (including funding planning), effective communication, field integration and teamwork skills; 6. The ability to identify, analyze and apply research findings and to address complex and integrated engineering problems; 7. Keeping abreast of current affairs, understanding the influence of electrical and information engineering technology on the environment, society and the world, and developing the habit and ability of continuous learning; 8. Understanding and applying professional ethics, recognizing social responsibility and respecting diverse perspectives to become an engineering specialist with humanistic ideals.

Level	Type	Revision
Graduate Institutes (including master's, doctoral and in-service master's programs)	Educational Objectives	<p>To train students to become independent researchers, team players and project achievers in electrical engineering, the following educational objectives are adopted to implement research training in the professional field.</p> <ol style="list-style-type: none"> 1. To equip students with knowledge in the field of electrical engineering as a basis for innovative R&D; 2. To prepare students for the use of electrical engineering and information to enable them to explore and think independently about solutions to specific problems; 3. To train students in the planning and execution of research projects, communication and presentation, and the writing of papers, in order to nurture high-tech talents for national infrastructure and development; 4. To enhance students academic ethics, communication and teamwork to inspire pragmatic and planning management skills; 5. To develop advanced professionals with an international perspective and lifelong self-learning skills.
	Student core competencies	<ol style="list-style-type: none"> 1. Expertise in electrical and information engineering; 2. Ability to plan and execute research projects; 3. Professional essay writing and presentation skills; 4. Creative thinking and independent problem-solving skills; 5. Ability to coordinate and integrate with people from different disciplines; 6. Good international outlook; 7. Leadership, management and planning skills; 8. Keeping abreast of current affairs and developing lifelong self-learning skills.