

## National Taiwan Normal University Undergraduate Program of Vehicle and Energy Engineering Course Structure

### I. Common Core Required Course (Total Credits: 28)

### II. Undergraduate Program Required Course (Total Credits: 47)

Subject	Credit(s)
Calculus (I)	3
Introduction to Energy Technology	2
Circuit Theory (I)	3
Electrical Circuits Experiment	2
Introduction to Energy Technology	2
Calculus (II)	3
General Physics	3
Introduction to Power Mechanics	2
Electronics (I)	3
Electronics Laboratory	2
Vehicle Basic Technology	2
Engineering Mathematics (I)	3
Thermodynamics (I)	3
Internal Combustion Engine	3
Applied Mechanics	3
Automatic Control Engineering	3
Automotive Chassis Repair (I)	2
Electric Vehicle	3

### III. Undergraduate Program Optional Course (Total Credits: 28)

Subject	Credit(s)
Computer Programming	3
Engineering Graphics and Computer-Aided Design	3
Introduction to Vehicle Engineering	3
Automotive Electronics	3
Microprocessors	3
Artificial Intelligence and Applications	3
Microprocessors Experiments	2
Basic Refrigeration and Air Conditioning Technology	2
Circuit Theory (II)	3
Principles and Applications of Sensors	3

Subject	Credit(s)
Internal Combustion Engine Test	2
Engineering Mathematics (II)	3
Thermodynamics (II)	3
Solar Photovoltaic Systems	3
Vehicle Energy Storage Systems	3
Renewable Energy	3
Refrigeration and Air Conditioning Principle	3
Gasoline Engine Diagnosis	2
Wireless Communications system	3
Vehicle Design	3
Engineering Material Applications	3
Technology of Energy Saving	3
Heat Transfer	3
Energy Application Practice	2
Refrigeration Engineering and Design	3
Diesel Engine Repair	2
Vehicle System Modeling and Dynamic Analysis	3
Design of The Vehicle Controller	3
Autonomous Vehicle Theory and Practice	3
Hybrid Vehicles	3
Internet of Vehicles Technology	3
Fluid Mechanics	3
Design and Application of Thermal Energy Storage System	3
Smart Grid	3
Air Conditioning Engineering and Design	3
Automotive Chassis Repair (II)	2
Automotive Electric System Repair	2
Vehicle Alternative Fuels	3
Image Recognition Technology	3
Renewable Energy Practices	2
Food Refrigeration	3
Transportation Refrigeration and Air Conditioning	3
Building Energy Conservation	3
Vehicle Performance Testing	2
Engine Rebuilding	2
Indoor Air Quality	3
Industrial Business, Management and Marketing	3
Vehicle and Energy Evaluation Exercise	2

Subject	Credit(s)
Ethics Engineering and Legal Practice	2
Maintenance and Repair of Electric Vehicle	3
Training for Professional Techniques (I)	3
Training for Professional Techniques (II)	3
Special Topics (I)	2
Special Topics (II)	2

**IV. Other Optional Course (Total Credits: 25)**