

TABLE OF CONTENTS

Section	page
TITLE PAGE	i
TABLE OF CONTENTS	iii
ADMINISTRATIVE INSTRUCTIONS	v
GRADING AND CERTIFICATION INSTRUCTIONS	v
INTRODUCTION TO WHEELED VEHICLE ENGINES	vi
Lesson 1: FUNDAMENTALS OF SPARK-IGNITION ENGINES	
Learning Event 1: Describe Principles of Operation, Construction, and Classification of Engines.....	1
Learning Event 2: Describe Components and Construction of Multicylinder Engines.....	28
Practice Exercise	51
Answers to Practice Exercise	52
Lesson 2: FUNDAMENTALS OF COMPRESSION-IGNITION ENGINES	
Learning Event 1: Describe Principles of Operation and Construction of Four-Stroke Cycle Engines.....	53
Learning Event 2: Describe Principles of Operation and Construction of Two-Stroke- Cycle Engines.....	68
Practice Exercise	73
Answers to Practice Exercise	74

Section	Page
Lesson 3: ENGINE INSPECTION	
Learning Event 1: Describe Visual and Operational Inspection Techniques.....	75
Learning Event 2: Describe Spark-Ignition Engine Testing Procedures	84
Practice Exercise	91
Answers to Practice Exercise	92
Lesson 4: ENGINE LUBRICATION SYSTEMS	
Learning Event 1: Describe Principles of Operation and Components of Lubrication Systems	93
Learning Event 2: Describe Purpose of Crankcase Ventilation System	112
Learning Event 3: Describe Maintenance Procedures for Engine Lubrication Systems	118
Practice Exercise	121
Answers to Practice Exercise	122
Lesson 5: ENGINE COOLING SYSTEMS	
Learning Event 1: Describe Principles of Operation and Components of Liquid-Cooling Systems	123
Learning Event 2: Describe Maintenance and Troubleshooting Procedures for Liquid-Cooling Systems	142
Practice Exercise	153
Answers to Practice Exercise	154
EXAMINATION	155