

Course Student Learning Outcomes Assessment

CMPR 157 Intro to Robotics Programming

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Table of Contents

General Information	1
Standing Requirements	2
Course Description.....	2
Course Student Learning Outcomes.....	2
2014-2015 Assessment Cycle	3
Measurements.....	3
Findings.....	3
Plans of Action.....	5
Status Reports.....	5
2013-2014 Assessment Cycle	6
Measurements.....	6
Findings.....	6
Plans of Action.....	6
Status Reports.....	6
2012-2013 Assessment Cycle	7
Measurements.....	7
Findings.....	7
Plans of Action.....	7
Status Reports.....	7

General Information (Course Student Learning Outcomes Assessment)

Standing Requirements

📖 Course Description

Introduction to Robotics Programming using the LEGO Mindstorms platform. Basic mechanical electronics and control issues in Robotics are discussed including the design and implementation of robotic systems. Students program a robot using several programming languages including the LEGO NXT-G" programming language as well as RobotC Not Exactly C (NXC) and Visual Basic. "

📖 Course Student Learning Outcomes

CMPR 157 Intro to Robotics Programming Outcome Set

Outcome	
Outcome	Mapping
Outcome 1 Students will have a working knowledge and understanding of how to create a machine to perform specific tasks.	Institutional Student Learning Outcomes: Communicate 1, Communicate 3, Learn 2, Think 1, Think 2
Outcome 2 Students will be able to develop entry-level robotics programs using the NXT-G language, VB, and RobotC.	Institutional Student Learning Outcomes: Communicate 1, Communicate 3, Learn 2, Think 1, Think 2
Outcome 3 Students will be able to install and configure the Lego Mindstorm software development system and create original software applications.	Institutional Student Learning Outcomes: Communicate 1, Communicate 3, Think 1, Think 2

2014-2015 Assessment Cycle

Measurements

Outcomes and Measures

CMPR 157 Intro to Robotics Programming Outcome Set

Outcome

Outcome 1

Students will have a working knowledge and understanding of how to create a machine to perform specific tasks.

▼ **Measure: SLO #1**
Course level; Direct - Other

Description of Measurement Tool: 5 Robot Challenges

Criteria for Success: Individual & Collective Student Criterion: 70% of students successfully complete challenges.

Cycle of Assessment: Fall 2014

Who is Responsible for Assessment Activity?: Department Chair and Instructor

Outcome 2

Students will be able to develop entry-level robotics programs using the NXT-G language, VB, and RobotC.

▼ **Measure: SLO #2**
Course level; Direct - Other

Description of Measurement Tool: Programming projects

Criteria for Success: Individual & Collective Student Criterion: 70% of students successfully complete projects.

Cycle of Assessment: Fall 2014

Who is Responsible for Assessment Activity?: Department Chair and Instructor

Outcome 3

Students will be able to install and configure the Lego Mindstorm software development system and create original software applications.

▼ **Measure: SLO #3**
Other level; Direct - Other

Description of Measurement Tool: Classroom activities

Criteria for Success: Individual & Collective Student Criterion: 70% of students successfully complete classroom activities.

Cycle of Assessment: Fall 2014

Who is Responsible for Assessment Activity?: Department Chair and Instructor

Findings

Finding per Measure

CMPR 157 Intro to Robotics Programming Outcome Set

Outcome

Outcome 1

Students will have a working knowledge and understanding of how to create a machine to perform specific tasks.

▼ **Measure: SLO #1**
Course level; Direct - Other

Description of Measurement Tool: 5 Robot Challenges

Criteria for Success: Individual & Collective Student Criterion: 70% of students successfully complete challenges.

Cycle of Assessment: Fall 2014

Who is Responsible for Assessment Activity?: Department Chair and Instructor

Findings for SLO #1

Summary of Findings: Over 91% of the 26 students who completed the course (Out of 30 who started) completed their robot challenges successfully.

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: This was an exceptional class and the results are much better than the year before. The objective was met.

Recommendations: No changes

Outcome 2

Students will be able to develop entry-level robotics programs using the NXT-G language, VB, and RobotC.

▼ **Measure: SLO #2**
Course level; Direct - Other

Description of Measurement Tool: Programming projects

Criteria for Success: Individual & Collective Student Criterion: 70% of students successfully complete projects.

Cycle of Assessment: Fall 2014

Who is Responsible for Assessment Activity?: Department Chair and Instructor

Findings for SLO #2

Summary of Findings: The challenges involve building and designing robots as well as programming them. Thus, 91% of the students achieved this standard.

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: This was an exceptional class and the results are much better than the year before. The objective was met.

Recommendations: I plan to add 3 more challenges that parallel the technology in smart cars such as adaptive speed control, for example.

Outcome 3

Students will be able to install and configure the Lego Mindstorm software development system and create original software applications.

▼ **Measure: SLO #3**
Other level; Direct - Other

Description of Measurement Tool: Classroom activities

Criteria for Success: Individual & Collective Student Criterion: 70% of students successfully complete classroom activities.

Cycle of Assessment: Fall 2014

Who is Responsible for Assessment Activity?: Department Chair and Instructor

Findings for SLO #3

Summary of Findings: Class room activities

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: All of the students were able to install/configure their computers so they could develop NXT-G projects. The objective was met.

Recommendations: I plan to purchase more Lego robots so each student will have a robot. This will eliminate the know issues which arise when students work in small groups.

Overall Recommendations

No text specified

 **Plans of Action**

 **Status Reports**

2013-2014 Assessment Cycle

 **Measurements**

 **Findings**

 **Plans of Action**

 **Status Reports**

2012-2013 Assessment Cycle

 **Measurements**

 **Findings**

 **Plans of Action**

 **Status Reports**