USER MANUAL

CrashCourse Virtual Reality Mobile Application

CS411 – Team Green

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## Revision Sheet

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# USER MANUAL

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1.0 GENERAL INFORMATION
1.0 General Information

1.1 System Overview

CrashCourse is a Virtual Reality Android application that simulates the consequences of driving while distracted. CrashCourse must be downloaded to a Smartphone that runs at least Android 4.1 (Jelly Bean) or newer and used in conjunction with a virtual reality headset such as Google Cardboard or Daydream. The app will take the user through a normal driving scenario in which an external stimulus will cause the user to be distracted from the road resulting in a car crash.

1.2 Project References

Google Cardboard - https://vr.google.com/cardboard/
Unity - https://unity3d.com/learn

1.3 Authorized Use Permission

CrashCourse is not to be used as a replacement for drivers’ education programs. CrashCourse is not responsible for any injury or sickness that may occur during use.

1.4 Points of Contact

1.4.1 Contact Information

CrashCourse can be contacted at the following address: crashcourseODU@gmail.com

1.4.2 Use and Troubleshooting

All information needed will be included in this User Manual

1.5 Organization of the Manual

1.0 General Information – Includes a system overview, contact information, and information regarding this User Manual.
2.0 System Summary – Includes a technical description on the application’s structure
3.0 Getting Started – Includes a brief description on how to start, use, and exit the application

1.6 Acronyms and Abbreviations

App: Mobile Application
VR: Virtual Reality
2.0 System Summary

2.1 System Configuration

CrashCourse must be installed in an Android device or smartphone running at least Android 4.1 Jelly Bean (released 27 June 2012) or newer. The device must contain a gyroscope. For the full effect, the smartphone running CrashCourse must be used with a virtual reality headset created for smartphones such as Google Cardboard, Samsung Gear VR, or Google Daydream.

Optional: If the smartphone is Bluetooth capable, a Bluetooth enabled game controller can be connected to the phone to use as a controller to control the user’s vehicle and interact inside the simulation.

2.2 Data Flows

CrashCourse is a “plug-and-play” style application. No user information is collected or stored during use of the CrashCourse app. All user input is used solely during the simulation.

2.3 User Access Levels

There is only one user for this application. This user is able to start the application and start the simulation through a main menu. The user is not able to access any source code or make any changes to how the app behaves.

2.4 Contingency and Alternate Use

In case of an application crash, close the application on the phone and restart the program. If the application continues to crash, uninstall CrashCourse and reinstall the application from the CrashCourse website: www.cs.odu.edu/~411green
3.0 GETTING STARTED
3.0 Getting Started

*note* all images are taken from an Android device running Android 7.1.1 Nougat. Users’ experience may vary depending on Android version and VR headset.

3.1 Setting up CrashCourse

CrashCourse can be downloaded from www.cs.odu.edu/~411.green.

Set up your VR headset according to manufacturer standards. Consult the manufacturer for further assistance.

Optional: Connect your Bluetooth controller to your Android device through your device’s settings menu.

3.2 Starting the App

Open up the CrashCourse app on your phone and the main menu should appear.

Start: Select to start the CrashCourse simulation
About: Select to open the CrashCourse website
Help: Select to open a copy of this User Manual
After selecting *Start*, insert your phone into your VR headset according to the manufacturer’s instructions.

### 3.3 Simulation

Upon starting the simulation, you should see the following screen:

Menu options:

- **X** (top left corner): Exit the application
- **Gear** (top right corner): VR settings. See Section 3.4

Controls:

Look around as you would normally to look at your surroundings.
Optional: A Bluetooth controller will allow you to move your car using the directional button pad.

During this simulation, a stimulus will occur (cell phone ringing) and once the user moves their head to look at the phone, a car crash will occur.

*note* If a shock collar is paired to the system, the user will experience a brief shock as the car crash occurs. CrashCourse is not responsible for any sickness or injury to the user using this feature.

### 3.4 VR Settings

When selecting the Gear icon inside the simulation, a VR Settings menu will appear.

*Headset:* allows you to select which VR headset is associated with the application
*Controller:* allows you to select a Bluetooth connected controller
*Daydream Keyboard:* not used in this app, though allows you to use the Google Daydream keyboard if connected.
*Notifications:* select which notifications are shown while in the VR simulation
*Help:* brings you to a help website for the VR headset being used.
*Open Source Licenses:* shows a list of open source licenses used.
*Build Version:* shows the current VR build version.