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| PHYS1521  **Math and Physics for Games**  Project Report  Digital Media and IT  School of Applied Sciences and Technology |

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# Introduction

Introduce your topic here. Give reason(s) why you chose this topic and the relevance to Game programming. Need at least one FULL paragraph.

Projectiles are moving objects that have plenty of physics associated with them. Our project is to create a virtual and realistic simulation of this. We chose this topic because plenty of video games use projectile-like assets. For example, Angry Birds uses projectiles (birds in this case) and they are affected by gravity, and other forces such as wind resistance. This report will highlight our efforts towards creating this realistic projectile simulation.

# Concept

Here you will have several paragraphs outlining the concept(s) of your project. You will need to go into depth on your project, i.e. outline all the key points relevant to Game Programming. For each key point below be sure to include diagrams/figures along with any math/code that is relevant to the key point. The diagrams and figures will need to be updated in the Table of Figures.

Wind Resistance

Bounding boxes / collisions

Air density (look into and see if it can be done)

Projectile motion

Accelerating/deaccelerating velocity

Sprite rotation (as necessary)

torque

Note: for our purposes gravity will always be -9.81 m /s2

## Forces Acting on a Projectile

## Conservation of Momentum

# Conclusion

Summarize the report by restating the reason for this topic and how the key points (covered above) make this topic relevant to Game Programming.

# References

Put all your references here.