

# Analytical Workflows

IB599

Mark Novak

Dept. of Integrative Biology  
Oregon State University

# Overview

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

## 1 Philosophy

## 2 Course Outline

- Website & Schedule
- Syllabus

## 3 Accounts & Apps

## 4 Project Proposals

## 5 Admission

# Overview

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

## 1 Philosophy

## 2 Course Outline

- Website & Schedule
- Syllabus

## 3 Accounts & Apps

## 4 Project Proposals

## 5 Admission

# Course Principles

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

## Automation

Doing science involves repetition at multiple levels.  
Automation is more efficient and reduces mistakes.

## Reproducibility

Science should be reproducible, by others and you.  
Your work must be *readable, organized, and self-contained*.

## Correctness

Science's limitations are human. Software can overcome bugs.  
Your science must be bug-free.

# Course Principles

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

## Simplicity

Analyses should be as simple as possible.  
Clever and readable are often at odds.

## Openness

Science is a worldwide endeavour.  
It, and access to it, should be free and equitable.

## Science as Software Development

Science has no end product, just versions and updates.  
Software developers have developed tools to help.

# Overview

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule

Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

## 1 Philosophy

## 2 Course Outline

- Website & Schedule
- Syllabus

## 3 Accounts & Apps

## 4 Project Proposals

## 5 Admission

# Website & Schedule

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

<https://github.com/analyticalworkflows>

# Overview

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

## 1 Philosophy

## 2 Course Outline

- Website & Schedule
- Syllabus

## 3 Accounts & Apps

## 4 Project Proposals

## 5 Admission



# What you'll need

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

## Software

- Git
- L<sup>A</sup>T<sub>E</sub>X

## Accounts

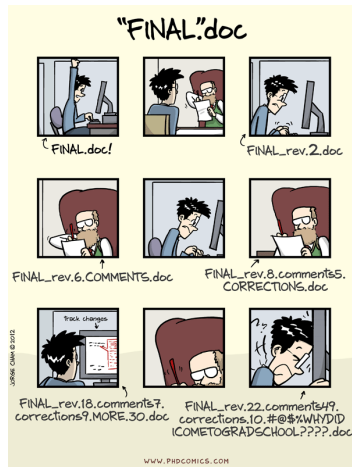
- GitHub<sup>1</sup>

## L<sup>A</sup>T<sub>E</sub>X editor

- TeXstudio, Atom, etc.
- OverLeaf

## Git GUI

- Sourcetree



<sup>1</sup>Please send me your username.

# To Zoom or not to Zoom?

Analytical  
Workflows

<https://discord.com>

Philosophy

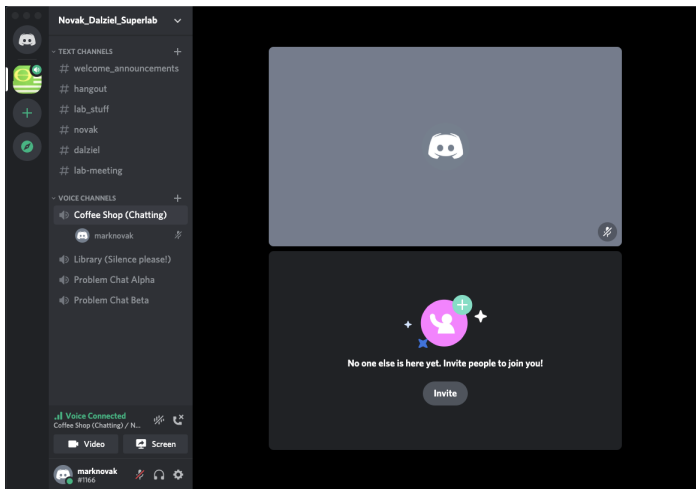
Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission



# Overview

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

## 1 Philosophy

## 2 Course Outline

- Website & Schedule
- Syllabus

## 3 Accounts & Apps

## 4 Project Proposals

## 5 Admission

# Project Proposals - Lets get started!

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

## Primary Goal

To develop more efficient research skills.

## Secondary Goal

To make significant progress on your thesis.

## Our belief

We can achieve both in this course!

[https://github.com/analyticalworkflows/  
TeachingMaterials/classes/ProjectProposal](https://github.com/analyticalworkflows/TeachingMaterials/classes/ProjectProposal)

# Overview

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

## 1 Philosophy

## 2 Course Outline

- Website & Schedule
- Syllabus

## 3 Accounts & Apps

## 4 Project Proposals

## 5 Admission

# We're all learning...

Analytical  
Workflows

Philosophy

Course  
Outline

Website & Schedule  
Syllabus

Accounts &  
Apps

Project  
Proposals

Admission

This is my first ever  $\text{\LaTeX}$  Beamer presentation!

- Be kind to yourself
- Support each other