The Value of a Curricular/Co-Curricular Circle
With your Makerspace Programming

With Brian Palmer and Andrea Hearn
Washington College, Chestertown, MD
Our Foundation in Making – Digital Media

- 2005 – Multimedia Production Center founded at Washington College
Our Foundation in Making – Digital Media
In the Beginning…

The 24 Hour Film Challenge will begin at 5:30PM today! Participating teams have 24 hours to create a short film with their choice of topic, or specifically Shakespeare’s Hamlet for students in Hamlet and it Afterlife. In either case, there are some required elements you should include, and a short list of additional elements to choose from.

Required Elements - All 5 must be included
- A scene with shots utilizing the Rule of Thirds. (You’ll likely use this at least one scene).
- An establishing shot
- A detailed closeup shot
- A shot from a low perspective (looking up)
- A shot from an overhead or high perspective (looking down)

Additional Elements - You must include at least 3 of the following 10
- A shot using slow motion video
- A shot using time lapse video
- A backlit shot
- A shot utilizing a reflective surface (mirror, puddle, etc)
- A shot where the subject is off camera, but their shadow is framed as the primary focus
- A shot with rack focus
- A dolly/zoom shot
- Voiceover (applied in post production)
- Background audio (applied in post production, either sound effects or music)
- Multiplicity (same person appears twice in the frame at the same time in production)
Astronomy 105 – Astrophotography Lab
Students learned how to capture the night sky using commonly available DSLR cameras at our Field and River Campus.

We followed up in the lab with methods to enhance the sky detail while maintaining publishable integrity.
Star Streaks or Star Trails - the apparent motion of stars in the night sky due to Earth's rotation.

Image credit: https://en.wikipedia.org/wiki/Star_trail
Astronomy 105

CAMPUS NEWS

Starry, Starry Night

When a physics professor and a digital media master gather students at the River and Field Campus to learn the fundamentals of astrophotography, the sky is literally the limit.

In a dimly lit classroom, students are examining a photo of the night sky that Brian Palmer has just brought up on a big screen. Everyone’s faces are aglow in the weird projected light.

“There are three streaks here in the sky,” says Palmer, director of Digital Media Services, which oversees IDEAWORKS, a multimedia resource for students. “Do you know what they are?”

Planes, answers one student, and he’s right, at least partly. When Palmer zooms in on one of the streaks, the repetitive blips of white, green, and red stitched across the sky reveal the navigation lights of a plane that the camera’s open shutter captured. But when

In 2015, IDEAWORKS, working with the astronomy department, created a program that allowed students to learn how to capture the night sky. Now, students in Kehm’s astronomy class to astrophotography. The students and teachers spent several hours one night last fall at the College’s River and Field Campus (RAFC), using cameras and gear provided by IDEAWORKS, shooting the night sky.

“It was the first time I had ever seen so many stars in one place,” says Kate Voynow ’16, an American studies major and history minor. “It was surreal. There was something really magical about it.”

The class surveys the universe, starting with Earth and moving through space and time to galactic clusters, supernovae, and black holes. Kehm says this is the second time he and Palmer have collaborated to bring students to observing night sky. 


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Spring Break Photography Workshop
Astronomy 105 → Spring Break Workshop
Makers Union – Student Club
Inspiration for a makerspace 
In the Netherlands:

- Zero emissions
- Three season short range commuting
- Pedal/electric hybrid
- Intersection of Art & Engineering

Image source: http://bicycledesign.net/2015/02/a-collection-of-velomobile-links-part-1/
EV Exploration – Electric Bike/Trike
EV Exploration – Taking to the Water…
Arduino Microcontrollers – IoT to BattleBots
Developed inexpensive beetle-weight (3lb limit) battlebot kits:

**Brains and Control**
- (One) Arduino Pro Mini
- (One) Sparkfun Motor Driver (dual motor)
- (One) 2 Channel Relay Module
- (One) 6 Channel RC Receiver
- Use of 6 Channel RC Transmitter (shared use)
- Arduino code for things like controlling drive and weapon
- motors, moving the actuator, etc.

**Muscle**
- (Five) 12v 300rpm N20 gear/motors
- (Five) 49mm Wheels for N20 motors
- (One) Axle coupler for N20 motor
- (Two) 12v Automotive Door Lock Actuators

**Power**
- (Three) 18650 Lithium Batteries (3.7v 1600mAh 15A)
- (One) 18650 Triple Battery Tray
- (Five) JST Male/Female disconnect with 20mm leads
- (One) Fuse holder
- (Two) Fuses (various sizes available)

**Structure & Misc** (You provide as needed – We do have limited quantities available)
- 3D Printing Filament
- Plywood
- Glue
- Bolts, Nuts, Washers, Screws, Worm Screws
Arduino Microcontrollers – IoT to BattleBots
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Some Challenges
It All Takes Time...
And Funding...
Questions?

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