


## Senior Capstone Projects

Making the Senior Year Meaningful



---

---

---

---

---


---

---

---

## What are Capstone Projects

- A project encompassing the major technical concepts mastered during a technical program
- Includes research, demonstration, presentation and technical skills
- Can represent one or more years of a technical program



---

---

---


---

---

---

---

---



## Why Capstones?

- Bring Emphasis and Rigor back to the Senior Year
- Demonstrate how well students have mastered the "Big Picture" of their technical program
- Provide students a portfolio of their work

---

---

---

---

---

---

---

---

### Project Example

- Senior project from an Academy of Health Occupations



---

---

---

---

---

---

---

---

**Don't be a menace, protect your meniscus!**



---

---

---

---

---

---

---

---

**Why I Chose This Topic**



---

---

---

---

---

---

---

---

## Meniscus

- Lateral and Medial meniscus
- Conform to the bone surfaces
- "Shock absorbers" between thigh and shin bones.
- Distribute body weight across the knee joint.



---

---

---

---

---

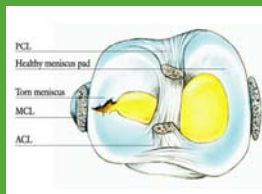
---

---

---

## What is a Meniscus tear?

- "Acute injury to the crescent-shaped fibrocartilage (lining the top surface of the tibia) within the knee either medial or lateral."
- Degenerative tears
- Traumatic tears
- Unhappy triad
- Contact sports



---

---

---

---

---

---

---

---

## Signs and Symptoms

- A pop can be felt
- Stiffness
- Pain and swelling
- Tenderness
- Popping or clicking
- Limited motion of the knee joint
- Knee giving way
- Decreased ROM
- Joint locking
- Inability to straighten the knee



---

---

---

---

---


---

---

---

## Clinical Tests

- Apley's Compression Test
- Ege's Test
- McMurray Test
- Joint Line Tenderness
- MRI
- X-Rays



The image contains three visual elements: two anatomical diagrams of a knee joint illustrating the McMurray test procedure, and a photograph of a healthcare professional performing a physical examination on a patient's knee.

---

---

---

---

---

---

---

---

## Statistics

- 50% of knee injuries resulted in a doctor's visit
- 30% cause an athlete to sit out the season
- 46% of knee injuries are among soccer players



The image contains three visual elements: a stethoscope icon, a photograph of a soccer player heading a ball, and a photograph of a crowd of people at a sports event.

---

---

---

---

---

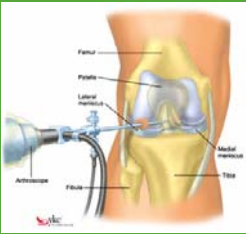
---

---

---

## How a tear is repaired

- Torn outside one-third of the meniscus
- Torn in the inner two-thirds of the meniscus
- Non-surgical treatment
  - RICE
  - Prolotherapy
  - Medication
- Surgical treatment
  - Meniscus Repair
  - Meniscectomy
  - Meniscus Transplantation
  - Arthroscopic Surgery



The image contains an anatomical diagram of a knee joint with labels for the Femur, Patella, Lateral meniscus, Medial meniscus, Tibia, Anterior Cruciate Ligament, and Posterior Cruciate Ligament.

---

---

---

---

---

---

---

---

## The Down Side of Surgery

- Lessening the shock absorber
- Cartilage is damaged
- Knee becomes unstable
- Arthritis risks increase
- Contact stress pressure significantly increases
- Repairs not healing completely
- 80% of athletes pain free while their cartilage was deteriorating



---

---

---

---

---

---

---

---

## Prevention

- Should be the number one priority
  - Warm-up properly
  - Avoid activities that cause pain
  - Rest and Recovery
  - Balancing exercises
  - Stretch and Strengthen
  - Proper footwear
  - Strapping

---

---

---

---

---

---

---

---

## Community Involvement



---

---

---

---

---

---

---

---

## The Program

- Prone hamstring stretch (20 sec.)
- Standing Tensor fasciae latae stretch (20 sec.)
- Straight leg raise (20 sec.)
- Calf raises (20 sec.)
- Standing quadriceps stretch (20 sec.)



- 3 days a week

---

---

---

---

---

---

---

---

## Any Questions?




---

---

---

---

---

---

---

---

## Sources

- [www.arthritis-treatment-and-relief.com](http://www.arthritis-treatment-and-relief.com)
- [www.caringmedical.com](http://www.caringmedical.com)
- [www.orthoinfo.aaos.org](http://www.orthoinfo.aaos.org)
- [www.About.com](http://www.About.com)
- [http://orthopedics.about.com/od/hipknee/a/kneesymptoms\\_2.htm](http://orthopedics.about.com/od/hipknee/a/kneesymptoms_2.htm)
- [www.webmd.com](http://www.webmd.com)
- [www.gettyimages.com](http://www.gettyimages.com)
- [www.acbc-of-fitness.com/leg-stretch/supine-hamstring-stretch.asp](http://www.acbc-of-fitness.com/leg-stretch/supine-hamstring-stretch.asp)
- [www.easvigor.net/n2/fitness/h\\_TFL\\_strst.htm](http://www.easvigor.net/n2/fitness/h_TFL_strst.htm)
- [www.healthline.com/h/book/art-straight-leg-raise](http://www.healthline.com/h/book/art-straight-leg-raise)
- [www.medscape.com/viewarticle/456856\\_5](http://www.medscape.com/viewarticle/456856_5)
- [www.rjphysio.com.nz/articles/meniscus%20tear.pdf](http://www.rjphysio.com.nz/articles/meniscus%20tear.pdf)
- [www.sports-injury-info.com/questions-meniscus-tear-return-to-soccer.html](http://www.sports-injury-info.com/questions-meniscus-tear-return-to-soccer.html)
- <http://orthopedic.about.com/cs/meniscusinjuries1/a/meniscusrepair.htm>
- <http://orthopedics.about.com/od/physicaltherapy/p/kneerehab.htm>
- [Http://orthopedics.eabout.com/cs/arthroscopy/a/arthroscopy.htm](http://orthopedics.eabout.com/cs/arthroscopy/a/arthroscopy.htm)
- [www.vimeo.com/4674317](http://www.vimeo.com/4674317)
- [www.ohio-ortho.com/downloads/articles/may\\_soccer\\_ohio.pdf](http://www.ohio-ortho.com/downloads/articles/may_soccer_ohio.pdf)

---

---

---

---

---

---

---

---

## THANK YOU

- Mrs. Jordan (McCray)
- Judges
- My PT/OT Class
- Brandon U-19 Soccer Team
- Parents and Guests

A hand is shown pointing towards a soccer player on a grassy field. The player is wearing a red and white uniform and is positioned near a soccer goal. A soccer ball is on the ground near the goal.

---

---

---

---

---

---

---

---

### Elements of the Project

- Research (coordinated with academic subjects)
- Detailed Technical Content
- Demonstration of technical information and/or Skills
- Duration of the entire Senior Year (progress benchmarks)
- Significant Grade Weight

---

---

---

---

---

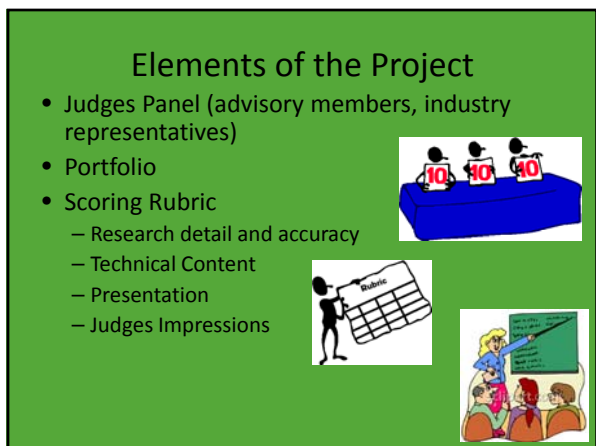
---

---

---

### Elements of the Project

- Judges Panel (advisory members, industry representatives)
- Portfolio
- Scoring Rubric
  - Research detail and accuracy
  - Technical Content
  - Presentation
  - Judges Impressions

The block contains three small illustrations: 1) Three people sitting at a table with signs that say '10', '10', and '10'. 2) A person holding a large grid labeled 'Rubric'. 3) A teacher pointing at a greenboard in a classroom with students.

---

---

---

---

---

---

---

---

### Student Impressions

- “Really Hard”
- “Didn’t know I learned so much”
- “Proud of myself”
- “Made me work during my Senior year”
- “Changed the way I look at \_\_\_\_\_”  
(career choice)



---

---

---

---

---

---

---

---

### Questions?



---

---

---

---

---

---

---

---

### Thank You

Mark Hunt  
Director, Career, Technical and Adult Education  
School district of Osceola County  
[huntmark@osceola.k12.fl.us](mailto:huntmark@osceola.k12.fl.us)  
<http://www.cte.osceola.k12.fl.us/>

---

---

---

---

---

---

---

---