Instructor Name: Michael Brncick
Email Address: mbrncick@jjc.edu
Office Location: T1061
Office Telephone: 815-280-2219
Office Hours: M-R 8:00 – 9:00 AM

Course Description:
The course is designed to familiarize students with the profession of orthotics and prosthetics. Emphasis will be placed on professional practice and the role of the technician. This introductory course will consist of lecture, laboratory and projects designed to provide a comprehensive overview of the profession.

IAI number: N/A

Credit and Contact Hours
* Credit Hours 2
  * Lecture/Demonstration 1
  * Lab/Studio/Clinical 2

Prerequisites: Official high school transcript or GED transcript on file with the Admissions Office verifying completion, interview with the program director, English 101 or higher, overall GPA of 2.5 or higher and completion of math 107 and math 108 or math 119. (Math 108 may be taken concurrently with OPT 100 if the math requirement has not already been met)

Books, Supplies, and Supplementary Materials
- **Required Textbooks/Reading list**
  - No text required. Materials provided by program director
- **Supplementary texts/materials**
  - All supplementary materials developed and provided by program director
- **Other resources utilized:**
  - Curriculum from Northwestern University’s Prosthetic Orthotic Center

Methods of Instruction:
- Lecture
- Laboratory
- Clinical Rotations

Student Learning Outcomes
1) Become familiar with the profession of Orthotics and Prosthetics
2) Utilize the proper terminology and “language” of the profession
3) Explain and apply basic fabrication principles used in the orthotic and prosthetic profession
4) Identify and use basic tools and machinery utilized in the O&P profession
5) Fabricate basic projects using prosthetic and orthotic equipment
6) Identify basic fitting, suspension and alignment techniques of prostheses and orthoses
General Education Student Learning Outcomes

Students must be able to:
Math: Calculate percentages, perform metric to English conversions, apply linear measurements with respect to human anatomy, perform basic geometric right angle lay out.

English and language skills:
Communicate verbal and written concepts in a clinical and laboratory environment.

Graded Assignments and Policies

Graded Assignments:
Laboratory projects are separated into technical and clinical sections. Each project is graded according to category. Quizzes and exams are given throughout the course. Attendance is taken and counted as part of the grade.

The following schedule is an estimate of the work that will be included in the final point total; should items be eliminated the same percentages will stand for the adjusted point total. The student’s grade is based on the individuals completed and corrected work.

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Number</th>
<th>Points</th>
<th>Total</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Projects</td>
<td>7</td>
<td>10</td>
<td>70</td>
<td>A 100%-92%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>5</td>
<td>20</td>
<td>100</td>
<td>B 91%-87%</td>
</tr>
<tr>
<td>Final Written</td>
<td>1</td>
<td>50</td>
<td>50</td>
<td>C 86%-78%</td>
</tr>
<tr>
<td>Final Project</td>
<td>1</td>
<td>50</td>
<td>50</td>
<td>D 77%-70%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>1</td>
<td>10</td>
<td>10</td>
<td>F Below 70%</td>
</tr>
</tbody>
</table>

Major Tests and Quizzes:
Student performance will be evaluated throughout the semester through the use of section quizzes; project evaluation check lists; midterm and final exams.

Classroom Policies and Procedures

A. General Information

Students must become familiar with the lab safety rules and abide by those rules. Students who are unable to follow the safety rules will not be allowed to continue in the program.

Complete all assignments and projects in a timely manner.

Wear proper clothing for surface anatomy sessions.

Homework assignments are required to be completed prior to the next class session. Homework assignments consist primarily of iCampus video presentations that are essential to understanding and preparing for laboratory projects for the next class meeting.

Open laboratory times are available each semester. The instructor will provide students with the open lab times at the beginning of each semester. Every effort should be made to complete projects during the allotted class time.

Since orthotics and prosthetics is a medical field, a clean and neat appearance is essential. Sleeveless shirts, short pants, or clothing of questionable taste, etc. are not acceptable in the O/P lab.

B. Attendance Policy:

Attendance is essential for the student to develop the sequentially presented skills. If absence is unavoidable, notify the instructor prior to a scheduled class. Because many of the projects build from what was done in previous class work, it is advisable to attend each class. Attendance is taken and class participation is counted as part of the grade.
Attend all classes. Do not make appointments during scheduled class times (doctors, dentist, personal, business, etc.).

An excused absence may be allowed in the case of personal illness, family emergency, transportation difficulties or as previously arranged with the instructor.

C. Make-up Policy
All work assigned will be due by the assigned date; late work may be accepted at a penalty to the student. The penalty is one-half (1/2) credit for the late assignment. The grade will be on a total point system with points assigned to each activity assigned to the class.

D. Extra-credit Policy
Students have the opportunity to gain extra credit through special projects, assistance in lab set up and other fabrication projects as determined by the department head. All extra credit must be scheduled and approved by the department head. Students may apply the agreed upon credit to projects, quizzes or exams.

E. Final Exam Information
Final exams are given during final exam week. Exams consist of a written exam and a laboratory practical.

F. Academic Honor Code
The objective of the academic honor code is to sustain a learning-centered environment in which all students are expected to demonstrate integrity, honor, and responsibility, and recognize the importance of being accountable for one’s academic behavior. Students who are found in violation of the academic honor code will be required to meet with the program director to determine the severity of the penalty. This may include dismissal from the program, remediation in the form of specific assignments or other measures that are determined by the department head.

G. College Statement about grades of “F” and withdrawal from class.
   - Students may withdraw from a course by processing an add/drop form during regular office hours through the Registration and Records Office at Main Campus or Romeoville Campus, or by phone at 815-744-2200. Please note the withdrawal dates listed on your bill or student schedule. Every course has its own withdrawal date. Failure to withdraw properly may result in a failing grade of “F” in the course.
   - At any time prior to the deadline dates established, an instructor may withdraw a student from class because of poor attendance, poor academic performance or inappropriate academic behavior, such as, but not limited to, cheating or plagiarism.

H. Intellectual Property
Students own and hold the copyright to the original work they produce in class. It is a widely accepted practice to use student work as part of the college’s internal self-evaluation, assessment procedures, or other efforts to improve teaching and learning and in promoting programs and recruiting new students. If you do not wish your work to be used in this manner, please inform the instructor.

I. Student Code of Conduct
Each student is responsible for reading and adhering to the Student Code of Conduct as stated in the college catalog.

J. Sexual Harassment
Joliet Junior College seeks to foster a community environment in which all members respect and trust each other. In a community in which persons respect and trust each other, there is no place for sexual harassment. JJC has a strong policy prohibiting the sexual harassment of one member of the college community by another. See Catalog or Student Handbook.
K. **Student Support** [http://jjc.edu/services-for-students/pages/default.aspx](http://jjc.edu/services-for-students/pages/default.aspx)

a. Disability Services: [http://jjc.edu/services-for-students/disability-services/Pages/default.aspx](http://jjc.edu/services-for-students/disability-services/Pages/default.aspx).

   Student Accommodations and Resources (STAR): *If you need disability-related accommodations, specialized tutoring, or assistive technology in this class, if you have emergency medical information you wish to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class or at my office.* New students should request accommodations and support by scheduling an appointment with the Student Accommodations and Resources (StAR) Office, Campus Center 1125, (815) 280-2230.

b. Tutoring: [http://jjc.edu/services-for-students](http://jjc.edu/services-for-students)

c. Counseling and Advising: [http://jjc.edu/services-for-students/counseling-advising](http://jjc.edu/services-for-students/counseling-advising)

d. Academic Resources: [http://jjc.edu/services-for-students/academic-resources](http://jjc.edu/services-for-students/academic-resources)

e. Support Programs: [http://jjc.edu/services-for-students/support-programs-services](http://jjc.edu/services-for-students/support-programs-services)

f. Technology Support: [http://jjc.edu/services-for-students/Pages/technology-support.aspx](http://jjc.edu/services-for-students/Pages/technology-support.aspx)

L. **Safety**

Students with an impaired ability to concentrate may jeopardize safety in this classroom for themselves, their classmates and their instructor. If your ability to concentrate is impaired you should discuss this matter with your instructor prior to operating equipment or performing a laboratory procedure. Students are responsible for reporting to their instructor any condition that would impair the ability to concentrate. Failure to notify your instructor of this issue may be a violation of the Student Code of Conduct.

For safety purposes, students are required to wear closed shoes at all times.

Safety glasses must be worn in all designated areas.

---

**Topical Outline**

<table>
<thead>
<tr>
<th>Week</th>
<th>Unit, Topic, Class Activity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Indicate approximate time allotment for each topic/unit)</td>
<td>Introduction to orthotics and prosthetics; history of the profession and organizations within the profession, certification requirements; roll of the O&amp;P technician, fitter, practitioner. Practice Management/HIPPA/Ethics</td>
</tr>
<tr>
<td>1</td>
<td>Introduction to O&amp;P</td>
<td><strong>Objectives:</strong>&lt;br&gt;1. Identify and describe the various organizations within the profession&lt;br&gt;2. Describe the pathway to technical certification and fitter registration&lt;br&gt;3. Recognize the importance of practice management with respect to patient privacy&lt;br&gt;Identify basic anatomy, explore neurological concepts and identify common pathologies specific to O&amp;P.</td>
</tr>
<tr>
<td>2</td>
<td>Introduction to O&amp;P (continued)&lt;br&gt;<strong>Anatomy, Neurology, Pathology</strong>&lt;br&gt;<strong>Foot Fabrication Lab</strong></td>
<td></td>
</tr>
</tbody>
</table>

---
| 3 | Normal Human Locomotion | Lecture/Lab Study the biomechanics of normal walking and identify the basic terminology used in describing normal gait patterns.  
**Objectives;**  
1. List the and identify the phases of gait  
2. Define the ground reaction force  
3. Predict a flexion or extension moment dependant upon location of a ground reaction force and an given joint location |
| 4 | Lower Extremity Surface Anatomy Foot Orthosis Laboratory | Locate and identify specific anatomical landmarks used in orthotic and prosthetic patient assessment specific to the lower extremity.  
**Objectives;**  
1. Palpate and name common surface landmarks  
2. Identify common skeletal structures specific to the lower limb  
3. Take a foam box impression for a foot orthosis  
4. Fabricate a basic foot orthosis |
| 5 | Lower Extremity Orthotics (Ankle/Foot) | Review of components, terminology and concepts to manage patients with lower extremity disability. Lower extremity orthotic project.  
**Objectives;**  
1. Explain the purpose of an AFO  
2. Identify the common components of an AFO  
3. Measure a patient for a lower extremity metal AFO |
| 6 | Lower Extremity Project | Lecture-demonstration of lower extremity project. Laboratory fabrication project.  
**Objectives;**  
1. Contour metal sidebars to a delineation  
2. Contour a calf band to a delineation  
3. Identify common instruments used to form metal |
| 7 | Lower Extremity Prosthetics (Transtibial) | Review components, terminology and concepts used to manage patients with transtibial (below the knee) amputations. Transtibial prosthetic project.  
**Objectives;**  
1. Identify common components of a Transtibial prosthesis |
| 8 | Lower Extremity Prosthetic Project | Lecture demonstration of transtibial project. Fabrication of transtibial project. **Objectives:** 1. Modify an impression of a knee segment to simulate PTB principles 2. Utilize plaster modification tools 3. Identify and delineate common landmarks of the knee 4. Perform plaster build ups |
| 9 | Lower Extremity Orthotics (Knee and Hip)  
Continue Lower Extremity Prosthetic Project | Review components, terminology and concepts used to manage patients with lower extremity disability at the knee and hip. Knee Ankle Foot project (KAFO). **Objectives:** 1. Identify the common components of a KAFO 2. Describe the purpose of a KAFO |
<p>| 10 | Lower Extremity Prosthetics (Transfemoral) | Review components, terminology and concepts used to manage patients with transfemoral (above knee) amputations. Transfemoral project. <strong>Objectives:</strong> 1. Identify the common components of a transfemoral prosthesis 2. Describe the purpose of a transfemoral prosthesis 3. Identify suspension techniques for a transfemoral prosthesis |
| 11 | Vacuum Forming Techniques | Concepts of upper extremity movement. Locate and identify specific anatomical landmarks used in orthotic and prosthetic patient assessment specific to the lower extremity. <strong>Objectives:</strong> 1. Prepare a cast for vacuum forming 2. Vacuum form a pediatric AFO |
| 12 | Upper Extremity Orthotics | Review of components, terminology and concepts to manage patients with upper extremity disability. Upper extremity orthotic project. <strong>Objectives:</strong> 1. Identify common components of an upper extremity orthosis 2. Explain proximal stability and grasp and release |
| 13 | Upper Extremity Prosthetics | Review components, terminology and concepts used to manage patients with transradial (below elbow) and transhumeral (above elbow) amputations. Upper extremity prosthesis project. <strong>Objectives:</strong> 1. Identify common components of upper extremity prostheses |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Describe the difference between voluntary closing and opening</td>
<td></td>
</tr>
<tr>
<td>3. Differentiate between external power and cable operated prostheses</td>
<td></td>
</tr>
<tr>
<td><strong>14</strong></td>
<td>Thermosetting Plastics Laboratory</td>
</tr>
<tr>
<td>Lecture/Lab; Prepare a pre-form for a basic lamination</td>
<td></td>
</tr>
<tr>
<td><strong>Objectives:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Prepare a cast for a basic lamination procedure</td>
<td></td>
</tr>
<tr>
<td>2. Understand and perform a basic lamination</td>
<td></td>
</tr>
<tr>
<td>3. Differentiate between a matrix and a layup</td>
<td></td>
</tr>
<tr>
<td><strong>15</strong></td>
<td>Spinal Orthotics (Continue) Thermosetting Laboratory</td>
</tr>
<tr>
<td>Review components, terminology and concepts used to manage patients with spinal pathology and disability.</td>
<td></td>
</tr>
<tr>
<td><strong>Objectives:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Identify biomechanical principles used in a common spinal orthosis</td>
<td></td>
</tr>
<tr>
<td>2. Identify a common components of a spinal orthosis</td>
<td></td>
</tr>
<tr>
<td>3. Perform finishing procedures for a thermosetting plastic</td>
<td></td>
</tr>
<tr>
<td><strong>16</strong></td>
<td>Course Review Complete Projects</td>
</tr>
<tr>
<td>Course Review and completion of unfinished projects</td>
<td></td>
</tr>
<tr>
<td><strong>Objectives:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Review basic knowledge and skills utilized in O&amp;P</td>
<td></td>
</tr>
<tr>
<td>2. Identify and utilize proper hand tools and machines to complete basic O&amp;P procedures</td>
<td></td>
</tr>
</tbody>
</table>

**Finals Week** | Final Exam and Lab Practical |

**Effective Date:** 1-16-2012