Senior Design 2020

CEET Senior Design is a two-semester experience (Senior Design I – Fall, Senior Design II – Spring) that provides an opportunity for practical and innovative problem solving geared towards creating a product to meet a real need for a sponsor. The Senior Design program is intended to engage students in a meaningful experience by bringing together concepts and principles learned in the engineering curricula, extending this theory to practical application, and to plan and construct a project. Course emphasis is placed on learning the design process within the framework of a design team. Particular focus in the design experience is placed on the creation of a ‘commercial product’. This experience is comprehensive, reflecting all aspects of the design process and industry practice.

The multi-disciplinary Senior Design program involves the selection-to-solution of a design challenge and follows a product design and development format practiced in industry. Students will be presented with a collection of design challenges that have been solicited from industry and they will be asked to form 3-member multi-disciplinary teams based on their interested projects and the skill sets that they believe are needed to effectively achieve a design solution. This promotes the integration of engineering students on teams (from Biomedical Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics Engineering), where a solution, for example, may be envisioned to involve complex circuitry and mechanical design. (It is also important to note that projects do not have to be geared towards the integration of engineering students on teams – they can be exclusive to any discipline based on the company’s needs.) Following project selection, each student team will meet with their industrial sponsor to gain a thorough understanding of the challenge and work to define and structure the project, including the development of a formal project proposal with a budget and a timeline. Throughout the entire sequence of Senior Design I and II, the teams meet regularly with their sponsor until the prototype/project is completed and then handed over to their sponsors.

The College asks for a $10,000 tax deductible sponsorship for each project, where, as a public university, the funding is used to support the infrastructure of the program. In addition, equipment costs should be covered by the company, so that the transfer of equipment to the company at the end of the project will not involve the transfer of state property. The attachment is a template worksheet that should be used to organize and collect ideas around each senior design challenge and assist in structuring proposals for developing prototypes, products, systems, algorithms, etc., etc. Also attached for your review is the college’s template for the Student Senior Design Agreement, which indicates that the company retains the intellectual property.

Ideally, I need to collect proposals by August 1st, since all project proposals will be presented to the Senior Design students before the start of the Fall 2019 semester. If there is interest, I would be extremely delighted to talk with anyone to review and discuss this beneficial program in more detail.

Sincerely,
Donald Peterson, Ph. D.
Dean and Professor of Mechanical Engineering
WORKSHEET FOR SENIOR DESIGN PROJECT PROPOSALS:
COLLABORATION WITH CLINICIANS OR INDUSTRY

In order to standardize the information on a proposed Senior Design project, please use the template below to submit one- to two-page descriptions.

TITLE OF PROJECT:

DATE SUBMITTED:

NAME OF INDUSTRIAL CONTACT PERSON: (Title and contact information including e-mail address and telephone number.)

ABSTRACT: (Provide one-paragraph description of the PROJECT, including tasks for the student team and expected outcomes.)

NOTE - Abstract examples from past projects are included below.

APPLICATIONS: (Provide a list of anticipated industrial applications of the proposed design.)

INDUSTRY SECTOR: (For example, DIAGNOSTICS, INSTRUMENTATION, etc., etc.)

ADVANTAGES: (EXPECTED BENEFITS over existing technology(ies) such as miniaturization, reduced cost, new information, etc.)

STAGE OF DEVELOPMENT: (For example, Proof of Concept, Prototype, etc.)

STATUS OF IP: (For example, None, Provisional Filed, Patent Pending, etc.)

Please submit each one- to two-page descriptions to:
Donald R. Peterson, PhD, MS, FAIMBE
Dean and Professor of Mechanical Engineering
drpeterson@niu.edu

Office of the Dean, Engineering Building 321 • DeKalb, Illinois 60115-2828 • 815-753-2256 • Fax 815-753-1310 • www.niu.edu/ceet
NORTHERN ILLINOIS UNIVERSITY IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION INSTITUTION.
TITLE OF PROJECT: Mistake-Proof Arbor and Shaft Assembly
ABSTRACT: Presently there are two arbors used in the assembly of drive shafts. One has the 3/8 thread and the other a 5/16. Currently there is no preventative measure in place except for part segregation to keep the operator from incorrectly using the wrong arbor. It is possible to inadvertently mix in a 5/16 arbor with a 3/8 at the upstream operations or a 3/8 arbor in with a lot of the 5/16 arbors. The desired solution would be one in which there is a device in place to check each arbor as it is assembled to the drive shaft to ensure the correct arbor is used each time. If the device detects the incorrect arbor the assembly machine will not cycle. If the correct arbor is detected, the machine will then cycle. The system must be integrated into the existing machine and PLC system.

TITLE OF PROJECT: Multi-Part Vision System Counter Prototype
ABSTRACT: Presently there is no an accurate way to verify counts of assemblies going into boxes. Weigh counting becomes problematic as the pallet and cardboard weights very greatly and it is not feasible to setup scales at each work station and maintain their calibration. The count of parts going into the boxes is manually maintained by the operators. The hourly job rotations also contribute to the opportunity for count errors of parts going into the boxes. The desired solution would be a system that utilizes a vision system or some other part recognition system to identify the parts as it is placed in the box by the operator and count up until it is reset by the operator. The system should be mobile and be able to set up at any work station and should be easily programmed and calibrated by the operator by first taking a picture of the desired assembly and then set to begin counting. As the box layer is filled the counter should count each part placed in the box. When a new layer of cardboard is placed in the box the system should retain its count for that layer and then begin counting again for the next layer. The system should be able to record layer by layer what is in the box and the total count in the box. The system should have some kind of visual display / counter that shows the count per layer, the total count in the box and the pieces per hour being assembled. System should be robust and have some kind of floor mount system. It would be preferred that the system look into the box from overhead. In addition, missing components is the single largest quality issue in the factory. Another goal would be to create a process and tools to reduce / eliminate the missing components in the warranty bag for the consumer. The process would need to work with each SKU and ensure the correct parts are installed as well as all the parts. Scales, pic sensor, vision, all are acceptable solutions.

TITLE OF PROJECT: Contributions of Thoracic Motion to Cervical and Shoulder Range of Motion in Patients Suffering from Cervical or Shoulder Pain Symptoms
ABSTRACT: Pain with cervical rotation may be caused by limitations of motion at the thoracic spine as end range cervical rotation can cause movement down to the forth thoracic vertebrae. Researchers have found that reduced mobility at the cervicothoracic junction was a risk factor for neck pain and that high-velocity, low-amplitude thrust manipulations (HVLATM) of the thoracic spine has been shown to decrease pain and increase cervical motion in individuals suffering from cervical pain and limitation. However, this is not validated this concept and the ability to directly assess and determine the contributions of thoracic spine motion to cervical pain remains difficult. Special clinical tests that use this concept have yet to be assessed for reliability and validity in the clinical evaluation of the thoracic spine in patient that suffer from cervical pain and motion limitations. A measurement device is needed to accurately measure thoracic spine motion and how this motion relates to the range of motion of the cervical spine and shoulder in order to help determine the contributions of the thoracic spine to these motions and help to validate the theoretical constructs involved in treating the thoracic spine in patients suffering from cervical and shoulder pain.

TITLE OF PROJECT: Development of an Electronic Stethoscope for the Continuous Detection of Bowel Sounds
ABSTRACT: A Neonatal Intensive Care Unit (NICU) provides care for infants in constant need of supervision. Currently, respiration, heartbeat, blood pressure, and oxygen saturation are displayed on a bedside monitor. There is a need to develop a continuous monitoring of bowel sounds as another vital sign, in order to assess intestinal health and to titrate feedings. There are currently no bowel sound recorders or analyzers in NICUs and normal values are not available for premature babies at differing gestational and postnatal ages. Yet, newborn babies frequently have feeding disorders, some which are quite serious. The goal is to develop a sensor to be attached to the infant’s abdomen along with a monitoring system for signal reception, filtration, analysis, and display. The anticipated result is promoting better feedings and to also avoid dangerous life threatening illnesses that threatens newly born infants. Current design barriers have been centered around the attachment of the sensor and the complex processing of the biosignal, where the elimination of unwanted noise and better signal processing are desired.
THIS AGREEMENT, made on ____________, 20____ and entered into by and between the College of Engineering and Engineering Technology, hereinafter called the “COLLEGE”, of Northern Illinois University, hereinafter called the “UNIVERSITY,” with principal offices at DeKalb, Illinois, 60115, and ______________________________, hereinafter called the “COMPANY,” with principal offices at ______________________________.

WITNESSETH:

WHEREAS, the COMPANY and the COLLEGE desire to enter into an agreement pertaining to a senior design project in accordance with the Statement of Work in Appendix A, hereinafter called the “PROJECT”; and

WHEREAS, the PROJECT is to be sponsored by the COMPANY, and COMPANY agrees to cooperate with the COLLEGE by:

(i) periodically supplying information and data pertinent to the current design project for use by the student design team;

(ii) promptly responding to written and/or telephone requests by the student design team concerning each undertaken project; and

(iii) sending a COMPANY "contact project engineer" to the COLLEGE, at a minimum, during the final weeks of each semester to evaluate results as they are presented by the student design team.

WHEREAS, the PROJECT is to be under the direction of a faculty mentor, hereinafter called the “FACULTY MEMBER”, who will direct the design team to endeavor to solve the project problem;

WHEREAS, the execution of the PROJECT is of mutual interest to the COMPANY and the COLLEGE and is consistent with the instructional objectives of the UNIVERSITY as a public education institution;

NOW, THEREFORE, in consideration of the sponsorship paid by COMPANY, the access given to COMPANY’s facilities and confidential and proprietary information and other good and valuable consideration, the COMPANY and the COLLEGE hereby agree as follows:

1. STATEMENT OF WORK

As an internal part of its industrial outreach, the COLLEGE shall assign a FACULTY MEMBER to oversee and direct the PROJECT, as described in the statement of work, which is incorporated herein and attached as Appendix A of this Agreement.

2. FINANCIAL SUPPORT

The COMPANY shall grant a ten thousand dollar ($10,000) subvention to the COLLEGE for each project to cover the normal costs of conducting the project, preparation of the written reports, oral presentation of the project, and to defray the ordinary expenses incurred in this program. The subvention is due and payable upon initiation of work by the design team on each project or upon a payment schedule agreed upon by the COLLEGE and the COMPANY. The COLLEGE shall retain title to equipment and any other items purchased with the subvention provided by the COMPANY. The subvention does not include extraordinary expenses unique to a particular project, such as, but not limited to, equipment purchase(s) specific to the project, project-related travel, extensive prototype development, computerized information searches, and/or extensive computer simulations. All extraordinary expenses are managed and covered by the COMPANY. Unless consumed during the conduction of the project, extraordinary items will be made available to the COMPANY at the culmination of the project. Payment shall be made to the COLLEGE and sent to the remit to address indicated on this agreement or in a separate invoice. The COLLEGE is not obligated to expend any other funds on the PROJECT and the COMPANY is not obligated to pay the COLLEGE in excess of the above stated amount.
COMPENSATION

A. It is understood that the members of the student design team will not receive from the COMPANY direct compensation or remuneration in any form in connection with their work on a project problem and that no principal-agent, employer-employee, or other relationship exists between the student design team, individual members of the student design team, or the COLLEGE and the COMPANY other than as explicitly set forth in this agreement.

3. INTELLECTUAL PROPERTY

As a general rule, without limitation, any intellectual property created, conceived or first reduced to practice by undergraduate students at the UNIVERSITY, including copyrights and patent rights, as work product of a course for credit, will be owned by the undergraduate student. The UNIVERSITY does not claim ownership of such intellectual property. Situations may occur in certain courses where students are presented with the opportunity to participate in a project or activity in which a sponsoring entity requires that the ownership of any resulting intellectual property must be assigned to the sponsoring entity as a condition of the student’s participation and access to confidential information, technology, and trade secrets belonging to the sponsoring entity. Students are never obligated to participate in activities that require the assignment of the student’s intellectual property to another entity; however, students are free to enter into an assignment of intellectual property assignment agreement directly with a sponsoring entity, if they so choose. The above treatment of intellectual property ownership does not apply when the student is an employee of the UNIVERSITY. As a general rule, without limitation, intellectual property created by faculty, staff, or students employed by the UNIVERSITY, acting in the course and scope of their employment, will be owned by the UNIVERSITY.

FACULTY MEMBER CONTRIBUTIONS

A. If FACULTY MEMBER or any other UNIVERSITY employee, including university-employed students, have any intellectual property pre-existing the date of this Agreement or developed independently of the PROJECT, such intellectual property shall remain the property of the UNIVERSITY. Should FACULTY MEMBER and/or UNIVERSITY employee desire to contribute or share such intellectual property to the PROJECT, the FACULTY MEMBER or any other UNIVERSITY employee will report the anticipated use of background IP to the Technology Transfer Office. The terms and conditions regarding use rights for such inventions shall be negotiated in good faith and confirmed by separate written agreement between the UNIVERSITY and COMPANY.

B. Should FACULTY MEMBER or any other UNIVERSITY employee, including university-employed students, be involved in the conception and reduction to practice of intellectual property with the student design team, and would qualify them as an inventor for such invention under U.S. patent law, the invention will be jointly owned by the COMPANY and the UNIVERSITY. Per the UNIVERSITY IP Policy, the UNIVERSITY employee will report the invention to the Technology Transfer Office. The terms and conditions regarding use rights for any jointly owned inventions by the UNIVERSITY and the COMPANY shall be negotiated in good faith at terms that are fair and reasonable.

INDIVIDUAL STUDENT APPROVAL

B. Students who chose to participate in projects in which the ownership of any resulting intellectual property must be assigned to a sponsoring entity as a condition of the student’s participation and access to confidential information, technology, and trade secrets belonging to the COMPANY will sign an appropriate agreement assigning their intellectual property rights to the COMPANY. One copy shall be retained by the COLLEGE and one copy sent to the COMPANY. Students will be advised that the assignment of intellectual property is a binding legal agreement and that they have the right to seek independent legal advice at their own expense prior to signing the agreement.

PATENTS

C. The COMPANY agrees, in the event that a design team makes an invention relating to a design problem during the course of solving this problem, upon which a patent application is filed, the COMPANY will include the individual members of the student design team and the FACULTY MEMBER, if qualified, as an inventor for such invention under U.S. patent law, as inventors in any resulting patent. The COMPANY shall keep the UNIVERSITY, COLLEGE, and the FACULTY MEMBER advised as to all developments with respect to any resulting patents.

PROPRIETARY INFORMATION

D. The COMPANY agrees that no confidential or proprietary information will be given to COLLEGE. Should confidential or proprietary information be required to be passed between the COMPANY and individual members of the student design team, it will be subject to the terms of a standard confidentiality agreement between the
COMPANY and the students directly, as well as subject to the terms of a standard confidentiality agreement between the COMPANY and the FACULTY MEMBER and UNIVERSITY. It is understood and agreed that the proprietary information and technical data disclosed by the COMPANY’s employees and representatives to the student design team shall be identified as “Confidential and Proprietary”. Restraints on further disclosure of proprietary information shall be well defined by the COMPANY. It is further understood that the COMPANY shall be responsible for ensuring compliance with U.S. export control regulations that apply to any proprietary information and technical data disclosed by the COMPANY. The student design team will be expected to abide by these restraints in the design reports, the oral presentations, any specific news release, and in any publication resulting from the design project. This paragraph in no way limits the generation of semester design project reports that are part of course requirements.

PUBLICATION

E. Publication of design teaching methods and results is of fundamental importance to the COLLEGE. Outside the normal conduct of the course, each member of the student design team reserves the right to publish findings resulting from their work on the project problem (providing such publication does not divulge proprietary information as specified in this Article); however, prior notice will be given to the COMPANY of any proposed publication and, if requested by the COMPANY, publication will be delayed up to six months to allow filing of all patent applications as specified in this Article. The COLLEGE further agrees that the COMPANY has the right to delete all direct and indirect references to COMPANY from publications. (These stipulations shall not in any way limit the ability of the members of the student design team to submit the findings of a project in the form of student papers, theses, or dissertations in accordance with course requirements and accepted academic process.)

1. The UNIVERSITY shall have the right to publish or otherwise disclose the results of this PROJECT, provided that the FACULTY MEMBER first provides the COMPANY with a copy of the proposed publication at least thirty (30) days in advance of submission for publication. The COMPANY shall have thirty (30) days after the receipt of the publication or presentation to review it. The FACULTY MEMBER shall modify said publication in order to comply with reasonable requests by the COMPANY. Upon notice by the COMPANY that the COMPANY reasonably believes a patent application relating to an invention should be filed prior to the publication or presentation, the COMPANY can request the UNIVERSITY to delay and the UNIVERSITY agrees to delay submission of the publication or presentation for up to six months from the date the COMPANY so notifies the UNIVERSITY or until a patent application or applications are filed, whichever comes first.

CONFIDENTIALITY

F. During the work on the PROJECT under this Agreement, the FACULTY MEMBER and the COLLEGE may acquire or have access to information or data that is confidential or proprietary and of great value to the COMPANY. This information may include, without limitation, formulations, designs, products, processes, suppliers, and methods of manufacture. The FACULTY MEMBER will use such information only in the performance of this Agreement, and shall not use it for any other purpose unless otherwise agreed to by the COMPANY in writing in advance. The FACULTY MEMBER shall not disclose to any third party any such information except to students who agree to maintain the confidentiality of the information or as permitted in writing by the COMPANY in advance. The FACULTY MEMBER shall not disclose to any third party any equipment, ideas, processes, methods of operation or plans observed at the COMPANY’s facilities. The COMPANY’s confidential or proprietary information will not include any information which: (i) is or becomes publicly known through no wrongful act on the part of the FACULTY MEMBER; (ii) is already known to the FACULTY MEMBER at the time of disclosure; (iii) is rightfully received by the FACULTY MEMBER from a third party without breach of any obligation of confidentiality owed to the COMPANY; (iv) is furnished to a third party by the COMPANY without a similar restriction on the third party’s rights; or (v) is explicitly approved for release by written authorization of the COMPANY. The FACULTY MEMBER shall promptly return all the COMPANY’s confidential information to the COMPANY upon request and in any case upon termination of this Agreement.

4. IDENTIFICATION

The COMPANY, the UNIVERSITY, the COLLEGE, and the FACULTY MEMBER shall not make use of the existence of the agreement, nor use the other’s name or the name of any member of its staff for publicity or advertising purposes except with the consent of, and to the extend approved by, the other party. This shall not prohibit the issuance of news releases regarding normal conduct of the course.
5. **REPORTS**

Near the end of each semester, the student design team will prepare a written final report and provide a formal oral presentation of the results of their work. The student design team is required to conduct formal oral presentations during a class period near the end of each semester; however, formal oral presentations may also be conducted for the COMPANY at a time and place that is mutually agreed upon by the FACULTY MEMBER and COMPANY. The FACULTY MEMBER shall be responsible for furnishing the COMPANY with the final reports regarding the PROJECT.

6. **TERM AND TERMINATION**

This Agreement shall commence as of the Effective Date and shall remain in force for a term of one year unless terminated earlier. The PROJECT may be terminated by either party upon thirty (30) days written notice with exception of the terms set forth in Articles 3 and 4. It is further agreed that endorsements to this agreement between the COMPANY and a student design team will terminate at the end of the school semester in which the formal design report is presented by that design team, with the exception of the terms set forth in Articles 3 and 4. In the event of termination by the COMPANY, the COLLEGE will be reimbursed for all costs incurred and all non-cancelable commitments at the time of termination. In the event of termination by the COLLEGE, any unexpended or unobligated balance of funds advanced by the COMPANY shall be refunded to the COMPANY. The provisions of Articles 3 and 4 of this agreement shall survive any termination of the agreement.

7. **NOTICES**

Notices hereunder shall be deemed made if given by overnight courier or by registered or certified mail, post prepaid, and notices, invoices, communications, and payments shall be addressed to the party to receive such communication at the address given below or such other address as may hereafter be designated by notice in writing:

If to the COMPANY:
Name/Title: Phone:  
Address: Cell:  
Address: E-mail:  
Address:  
City/State/Zip:  

If to the COLLEGE:
Name/Title: Phone:  
Address: Cell:  
Address: E-mail:  
Address:  
City/State/Zip:  

If to the FACULTY MEMBER:
Name/Title: Phone:  
Address: Cell:  
Address: E-mail:  
Address:  
City/State/Zip:  

Notice given pursuant to this Article shall be effective as of the day of receipt of notice.

8. **WARRANTIES AND INDEMNIFICATION**

SENIOR DESIGN PROJECT RESULTS ARE PROVIDED “AS IS” WITHOUT ANY REPRESENTATION OR WARRANTIES, WHETHER EXPRESSED OR IMPLIED. THE PARTIES MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, REGARDING THEIR PERFORMANCE UNDER THIS AGREEMENT, INCLUDING BUT NOT LIMITED TO THE MARKETABILITY, USE OR FITNESS FOR ANY PARTICULAR PURPOSE OF THE INVESTIGATION RESULTS DEVELOPED UNDER THIS AGREEMENT, OR THAT SUCH RESULTS DO NOT INFRINGE UPON ANY THIRD PARTY’S PROPERTY RIGHTS.

The COMPANY shall defend, indemnify and hold harmless the UNIVERSITY, the COLLEGE, the FACULTY MEMBER, and any of the UNIVERSITY’s faculty, students, employees, trustees, officers, affiliates and agents, hereinafter collectively called the “INDEMNIFIED PERSONS” from and against any and all liability, claims, lawsuits, losses, damages, costs or expenses (including attorneys’ fees), which the INDEMNIFIED PERSONS may hereafter incur, or be required to pay, as a result of the COMPANY’s use of the results of the PROJECT or any intellectual property of the UNIVERSITY or as a result of any breach
of this agreement or any act or omission of the COMPANY, its employees, affiliates, contractors, licensees or agents. The UNIVERSITY shall notify COMPANY upon learning of the institution of any such liability, claims, lawsuits, losses, damages, costs and expenses and the UNIVERSITY shall cooperate with the COMPANY in every proper way in the defense of settlement thereof at the COMPANY’s request and expense.

9. GENERAL PROVISIONS

A. Non-assignability. The rights and obligations of the parties under this agreement shall not be assignable without written permission of the other party.

B. Severability. If any provision hereof is held unenforceable or void, the remaining provisions shall be enforced in accordance with their terms.

C. Entire Agreement. This agreement contains the entire and only agreement between the parties respecting the subject matter hereof and supersedes all previous negotiations, agreement, commitments and writings between the parties on the subject of this agreement. Should processing of this agreement require the issuance of a purchase order or other contractual document, all terms and conditions of said document are hereby deleted in their entirety. This agreement may not be amended in any manner except by an instrument in writing signed by the duly authorized representatives of each of the parties hereto.

D. Export Control Regulations. The COMPANY shall comply with all applicable export control regulations of the United States of America. The COMPANY shall be responsible for obtaining all information regarding such regulations that is necessary for the COMPANY to comply with such regulations.

10. GOVERNING LAW

This agreement shall be governed and construed in accordance with laws of the State of Illinois.

IN WITNESS WHEREOF, the parties have executed this agreement on the dates indicated below by representatives authorized to make such commitments on behalf of the respective party.

COLLEGE OF ENGINEERING AND ENGINEERING TECHNOLOGY

By: ____________________________  By: ____________________________
Name: __________________________  Name: __________________________
Title: ____________________________  Title: ____________________________
Date: ____________________________  Date: ____________________________

FACULTY MEMBER

By: ____________________________
Name: __________________________
Title: ____________________________
Date: ____________________________
STATEMENT OF WORK FOR PROPOSED SENIOR DESIGN PROJECTS:  
COLLABORATION WITH CLINICIANS OR INDUSTRY

TITLE OF PROJECT:

DATE SUBMITTED:

NAME OF INDUSTRIAL or CLINICAL CONTACT PERSON:  (Title and contact information including e-mail address and telephone number.)

ABSTRACT:  (Provide, at least, a 3-paragraph description of the PROJECT, including tasks for the student team, desired expertise of faculty supervisor, and expected outcomes.)

APPLICATIONS:  (Provide a list of anticipated medical or industrial applications of the proposed design.)

INDUSTRY SECTOR:  (For example, DIAGNOSTICS, INSTRUMENTATION, etc.)

ADVANTAGES:  (EXPECTED BENEFITS over existing technology(ies) such as miniaturization, reduced cost, new information, etc.)

STAGE OF DEVELOPMENT:  (For example, proof of concept, prototype, etc.)

STATUS OF IP:  (For example, none, patent pending, etc.)
I have chosen to participate in a design project for which the sponsoring entity requires an assignment of intellectual property I create as a result of this project to the sponsoring entity as a condition of participation, and access to confidential information, technology, and trade secrets belonging to the sponsoring entity. I understand that my rights and responsibilities regarding intellectual property I create as an undergraduate student Northern Illinois University include the following.

**General Rule.** As a general rule, any intellectual property created, conceived, or first reduced to practice by undergraduate students at Northern Illinois University, including copyrights and patent rights, as work product of a course, will be owned by the undergraduate student. The University does not claim ownership of such intellectual property.

**Special Situations.** Situations may occur in certain courses where students are presented with the opportunity to participate in a project or activities in which a sponsoring entity requires that the ownership of any resulting intellectual property must be assigned to the sponsoring entity as a condition of the student’s participation and access to confidential information, technology, and trade secrets belonging to the sponsoring entity. Students are never obligated to participate in activities that require the assignment of the student’s intellectual property to another entity; however, students are free to enter into an assignment of intellectual property assignment agreement directly with a sponsoring entity if they so choose.

The student’s grade and/or evaluation of performance in the course will not be affected by the student’s decision to participate or not to participate in projects or activities requiring the assignment of the student’s intellectual property.

Students should understand that the assignment of intellectual property is a binding legal agreement and that they have the right to seek independent legal advice at their own expense prior to signing this agreement. Students may seek additional information regarding university intellectual property policy through the Technology Transfer Office in the Division of Research and Innovation Partnerships at Northern Illinois University.

**Assignment of Rights.** I agree as a condition of my participation as a member of the design team for the project sponsored by: ____________________________

entitled: ____________________________________________________________________________

to assign, and do hereby assign, to ____________________________

all right, title, and interest to intellectual property rights (including, but not limited to, copyright and patent rights) that I may acquire in copyrightable and/or patentable documents, inventions, or discoveries that are created, authored, conceived or first actually reduced to practice by me as a result of my participation in this course. I agree to inform the Sponsor of any intellectual property that I may develop and to cooperate with the Sponsor, at the Sponsor’s expense, to obtain a patent and/or register a copyright as the case may be regarding my intellectual property.

**Waiver of Right to Receive Royalties.** I understand that if I assign my intellectual property rights to the Sponsor, then the Sponsor will manage the intellectual property and shall be solely responsible for patenting and commercialization of the intellectual property. The Sponsor shall have the right and responsibility to determine the extent of United States and foreign patent prosecution, maintenance, enforcement and defense relating to the intellectual property. I understand that if I assign my intellectual property rights to the Sponsor, then I will not receive any financial benefit or licensing or patenting assistance from the University for that Intellectual Property. Any financial benefit would have to be agreed to in a separate agreement with Sponsor.
Cooperation with Patenting Process. I agree to make myself available to patent attorneys, to sign all papers, take all rightful oaths, and perform all acts which may be necessary for fulfilling this assignment and for securing and maintaining patents to the intellectual property in any and all countries and for vesting title thereto in the Sponsor. The Sponsor understands that, since I am an inventor, I will be included as an inventor in any resulting patent sought by the Sponsor. I understand that my responsibilities to cooperate in the patenting process under this agreement will continue after completion of the course and possibly even after my association with the University.

This agreement is effective upon the latest date of signature.

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A parent or legal guardian signature is required for students younger than 18 years of age:

Parent/Legal Guardian: _________________________ Date: _________________________

Agreement Acknowledged:

**FACULTY MEMBER**

By: ___________________________

Name: _________________________

Title: _________________________

Date: _________________________