NATURAL LANGUAGE PROCESSING GRADUATE CREDIT CERTIFICATE PROGRAM

Person-in-Charge	Raghu Sangwan
Program Code	MAINLP
Campus(es)	Great Valley World Campus

The Natural Language Processing (NLP) Graduate Certificate prepares students for working as an NLP Engineer who will analyze, identify, architect, design, and implement NLP based systems. Students master the following skill set essential to this industry role:

- Identifying NLP tasks
- Framing NLP problems (language translation, chatbots, speech recognition, language models, etc.)
- Designing NLP pipelines to collect and preprocess textual data.
- Building and evaluating NLP models based on deep neural networks.
- Implementing explainable and interpretable NLP models.
- Evaluating ethical and fairness in NLP tasks

Courses taken in the certificate program may be applied toward a master's degree in Artificial Intelligence, subject to restrictions outlined in GCAC-309 Transfer Credit (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/gcac-309-transfer-credit/). Certificate students who wish to have certificate courses applied towards a graduate degree must apply and be admitted to that degree program. Admission to the graduate degree program is a separate step and is not guaranteed.

Effective Semester: Spring 2024
Expiration Semester: Spring 2029

Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (https://gradschool.psu.edu/graduate-admissions/how-to-apply/). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (https://gradschool.psu.edu/graduate-education-policies/). International applicants may be required to satisfy an English proficiency requirement; see GCAC-305 Admission Requirements for International Students (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/gcac-305-admission-requirements-international-students/) for more information.

1. The successful applicant is generally expected to have a minimum combined junior/senior grade-point average of 3.0 (B) on a 4.0 scale.
2. Courses taken in the certificate program may be applied toward Master of Software Engineering degree, subject to restrictions outlined in GCAC-309 Transfer Credit (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/gcac-309-transfer-credit/). Certificate students who wish to have certificate courses applied towards the Master of Software Engineering must apply and be admitted to that degree program. Admission to the Master of Software Engineering graduate degree program is a separate step and is not guaranteed.

Certificate Requirements

Requirements listed here are in addition to requirements listed in Graduate Council policy GCAC-212 Postbaccalaureate Credit Certificate Programs (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-212-postbaccalaureate-credit-certificate-programs/).

Code	Title	Credits
Required Courses		
A-I/DAAN 570	Deep Learning	3
A-I 574	Natural Language Processing	3
A-I 804	Ethics of Artificial Intelligence	3
Total Credits		**9**

All courses must be completed with a minimum grade of C or better and an overall GPA of 3.0.

Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

Learning Outcomes

1. **KNOW** - Demonstrate proficiency in mastering deep neural networks, ethical and foundational concepts in Natural Language Processing tasks.
2. **APPLY/CREATE** - Demonstrate mastery of concepts and methods for modeling, designing, developing, and testing ethically and responsible NLP applications.

Contact

Campus	Great Valley
Graduate Program Head	Raghu Sangwan
Director of Graduate Studies (DGS) or Professor-in-Charge (PIC)	Youakim Badr
Program Contact	MICHELLE WHALEN 30 E. Swedesford Rd. Malvern PA 19355 mmw6441@psu.edu (610) 648-3288

Campus	World Campus
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