CS486C – Senior Capstone Design in Computer Science

Project Description

Faculty Workload Assessment and Communication System	
NAU NORTHERN ARIZONA UNIVERSITY	**Dr. Diana Frances Elder** Associate Dean for Research & Inclusive Opportunities Director, Colorado Plateau Cooperative Ecosystem Studies Unit College of the Environment, Forestry, & Natural Sciences Northern Arizona University **Dr. Scot Raab** Associate Dean of Academic Affairs College of the Environment, Forestry & Natural Sciences Northern Arizona University

1. Introduction

With the upcoming implementation of a new NAU faculty workload policy, there is a need for a streamlined method to quantify and communicate teaching workload expectations and assigned teaching for a given semester for individual faculty. Currently, the process for assessing assigned teaching workload relies on manually checking assignments in Peoplesoft and comparing them against the expectations set between the faculty and the chair. When discrepancies arise, manual, case-by-case communication is necessary to resolve them. Furthermore, assessing faculty workloads is vital for understanding departmental staffing needs and informing future hiring decisions.

2. Problem Statement

The current process for assessing assigned faculty workload is cumbersome and prone to inefficiencies. It involves manual checks, several communication channels, and lacks a centralized system to facilitate the resolution of discrepancies. This results in delays, inaccuracies, and additional effort for department chairs, deans, and the provost. Furthermore, the inability to effectively analyze and monitor faculty workloads hinders long-term planning for departmental staffing and resource allocation.

3. Project Objectives

The primary objective of this project is to develop a comprehensive software solution that supports the assessment and communication process related to faculty workload discrepancies. The system will:

- **Import data**: Allow chairs to import workload data from Peoplesoft for analysis.
- **Analyze data**: Automatically analyze faculty workloads against the new policy to quantify assigned workload.
- **Input expected workload**: Enable chairs to input the expected workload per faculty member, with options to set default values.
- **Provide discrepancy feedback**: Alert chairs to cases where the assigned teaching workload does not match expected teaching workload for a given semester.

- **Justification management**: Allow chairs to enter justifications (e.g., new prep, intensive field study) for workload adjustments, with predefined or custom options.
- **Custom course load**: Provide an option to set a default load to courses that are known for having a workload that does not match the generic workload as described in the NAU Workload Policy.
- **Communication thread**: Facilitate communication between the chair, dean, and provost via a comment thread system, where cases can be discussed and resolved. All interactions must be stored for future reference.
- **Department staffing report**: Generate reports indicating the difference (positive or negative) between aggregated departmental teaching assignments and aggregated departmental teaching expectations.
- **Role-based access control**: Implement password-protected access control, ensuring that only authorized personnel can view and interact with department-specific data. Access will be managed via NAU's authentication mechanism, with internal access also supported.
- **Admin interface**: Allow administrators to create the departmental hierarchy, ensuring that only those in the reporting chain can access and communicate about specific data.

4. Project Scope

The system will include the following core features:

- **Data Import from Peoplesoft**: Chairs can easily import data from Peoplesoft to assess faculty workloads.
- **Policy-Based Analysis**: The system will analyze the imported data following the workload policy (such as NAU's Faculty Workload Policy) and flag discrepancies between the actual and expected workload (as per the Statement of Expectations).
- **Workload Management Interface**: Chairs will be able to input and manage faculty workload expectations, add justifications for adjustments, and log custom course loads where applicable.
- **Communication Thread System**: The software will feature a thread-based communication system where the chair, dean, and provost can comment on and discuss workload cases. All communications will be stored for future reference.
- **Role-Based Access Control**: Access to data will be controlled through role-based permissions, using NAU's authentication mechanism. An internal access system will be available for fallback.
- **Admin Interface**: Administrators will set up the reporting hierarchy within departments to ensure proper communication and access.
- **Reporting Features**: The system will generate reports that identify departmental alignment of teaching assignments and teaching expectations, potentially aiding in resource allocation management and hiring decisions.

5. Expected Deliverables

- A fully functional system with the ability to:
    - Import and analyze workload data against the policy.

    - Provide a customizable workload input and discrepancy feedback system for chairs.
    - Facilitate a threaded communication system between chairs, deans, and the provost.
    - Generate departmental staffing reports.
    - Protect data through role-based access control and NAU authentication.\

- User documentation and admin setup guidelines.

6. Technical Specifications

- **Platform**: Web-based platform accessible to NAU faculty and administrators.
- **Technology Stack**: can be defined by the team. If running on ITS, it is important to synchronize with them before moving
    - **Authentication**: Integration with NAU's authentication system for secure access control.
    - **Role-Based Access Control**: Granular permission settings based on user roles and departments.
    - **Data Import/Export**: Support for CSV/XLSX data imports from Peoplesoft and report exports in PDF or Excel format.