Woodring College of Education
Preparing thoughtful, knowledgeable,
and effective educators for a diverse society

Data Collection, Analysis, and Evaluation
Woodring Information Systems

The Woodring Information System (WIS) is a comprehensive data management system that was developed collaboratively by the Woodring College of Education and Western Washington University Administrative Computing Services. The WIS supports a web-based interface for creating a wide range of reports pertaining to candidate admission, continuation, internships, program evaluation and program completion as well as program operations. The WIS accesses dedicated relational databases that were built specifically for this system as well as various University databases such as those maintained through Admissions, Registrars, and Graduate School. The system is accessed by support personnel throughout the educator preparation and other programs and provides real-time data in ready to use report formats. The WIS, which is in the 7th year of full implementation, consolidates data management functions that previously were distributed throughout the college. As a result, our data collection and reporting processes are now more accurate, consistent, and timely and candidate performance information is widely available for use in making program-improvement decisions. The WIS is maintained and managed by the College of Education Director of Assessment and Evaluation who oversees all aspects of the system, including data entry and access protocols, report generation, professional development for support staff using the system, and interface with University and state-level data system and research and evaluation personnel.

Woodring Information System Design

The Woodring Information System stores information electronically on candidates enrolled in the College. The system combines University data on applicants, enrolled candidates and course offerings with tables of information unique to the tracking and assessment requirements of teacher education, educational administration, human services and other candidates. The web-based screen forms allow staff at all locations to view candidate information stored in the University tables, such as addresses, course history, admissions and enrollment status as well as other information maintained by the staff of the College. The query system produces reports and lists that assist staff in tracking candidate progress through the programs. It also accommodates sophisticated analysis of candidate performance for program evaluation purposes.

Design of the Woodring Information System spanned over a two year period commencing in summer of 2002. In January 2004, on-campus teacher education candidates were the first group brought live into the system. Subsequently, off-campus teacher education candidates were brought on line, then educational administration, principal certification candidates and superintendent candidates were brought on line. Sometime after summer 2005 Human Services and all other graduate programs were converted into the new system.

The assessment tracking component of the system underwent a major enhancement in 2006 where expected program level assessments could be tied to cohorts of candidates. Cohorts are defined by curriculum, site, campus, level and other factors. In 2008 an additional assessment module, called WWU Assessment Data Management System (WADMS), was implemented allowing a link between assessments and courses. Built upon the 2006 assessment project, this system is embedded in the University data system ("Banner") and is now enjoying University-wide use. All WADMS components

are managed by College of Education Director of Assessment and Evaluation with the technical support of the WWU Administrative Computing Services. WIS and WADMS system security is routed through the same module that regulates access to all University candidate data.

The fields maintained by the Woodring staff include data specific to candidate progress through the Woodring curriculum and on to certification and/or graduation. Since Elementary and Secondary teacher education candidates can complete majors outside of Woodring College, the system was designed to facilitate tracking of teacher education requirements that fall outside of candidates' majors. Information about individual candidates such as name, identification number, addresses, academic course work (transcript information), gender, ethnicity, background such as high school are maintained by the Registrar's Office and the Graduate School.

The Woodring side of the system includes Woodring admissions tracking, curriculum, program-level assessments, teaching and principal internship and practica tracking, Human Services internship tracking, fingerprint clearances and certification history. The system contains comprehensive tables of information on public K-12 schools, school districts and agencies in which our candidates intern. An embedded module tracks internship supervisor pay, pay forms and supervision details.

Test scores relevant to teacher education such as WEST B and WEST E are entered electronically into the system in a cooperative arrangement with the University Admissions office. The Graduate School manages the entry of GRE and Miller Analogies scores. The tables of test scores are available for viewing and querying in both the University and Woodring systems.

Woodring Information System (WIS) Screen Forms

The screen forms are the windows for viewing information about candidates enrolled in Woodring programs. Permission to the screen forms is on a page by page basis. Once logged into the system (Figure 1) the general information page appears (Figure 2). Above that page are tabs directing the user to the different focus areas contained in the database record. The tabs are Candidate Detail, Curriculum, Assessments, Certification, Clearance, Ed Internships, Ed Practica, HSR Internships, Admissions, Schools, School Districts and Agencies. As an example, the curriculum page (Figure 3) contains the curriculum type, begin term, level, site, Woodring advisor, campus, division and department. It also displays, in reverse chronological, order the "actions" taken on that particular candidate during his or her tenure in the Woodring program. Those actions range from date of matriculation, to being placed on probation to withdrawing or completing the program. The header of each form remains constant, displaying the candidate's identifying information and a general synopsis of their Woodring and WWU programs.

The assessments unique to the program or programs in which the candidate is enrolled appear under a separate tab. In this example (Figure 4) the candidate has completed three of the five Special Education assessments. If a candidate is enrolled in more than one program, such as Special Education *and* TESOL, there will be two pages of expected assessments under the assessment tab, one relating to each of the two programs. The assessment module in WIS offers flexibility for faculty to dictate any unique grading mode. It also facilitates entry of a second assessment grade when the first was repeated, thus allowing tracking of a candidate's full history in a course.

Staff members of the College are granted either edit or view-only access to the screen forms on the basis of job requirements. Staff members who process applications to programs are responsible for data input on the application page. Likewise, staff members who place candidates in internships are responsible for entering that internship and/or practica information into the system.

Another component of the system supports the function of tracking internship supervisors and administering the supervisor payment system. There are three screens dedicated to supervisors and are accessed through the same web portal. As an example, one of the supervisor pages (Figure 5) displays the school of a mentoring teacher, basic pay processing information, and a list of candidates under his/her supervision for each term that the teacher is working.

The WIS screen forms are used daily for input and information gathering by staff of the College. Another component of the system was developed in response to a need to tie assessments to courses. This product, WADMS, facilitates another way to collect candidate and program evaluation data.

WWU Assessment Data Management System (WADMS)

In 2008 the WWU Assessment Data Management System was implemented. Design of the system occurred in collaboration with the College of Business and Economics, College of Education and Administrative Computing Services. Goals of the design were to build upon existing features of the WIS assessment product and facilitate association of assessments to courses and candidates in courses. It allows assessments to be entered at the course level, e.g. 83% of the candidates in this course met standard on item X, or at the candidate level, e.g. Jane Doe exceeded standard on X assessment of Standard 5 competency. Data entered for each candidate in the course are electronically averaged into a section-level course average.

A strength of WADMS is that the data entry process mimics that of course grade input. This design feature is for ease of use for faculty and staff who are already familiar with entering grades for candidates in courses. Figure 6 illustrates how a faculty (or staff) member selects a course for any term. On the dropdown, faculty are presented with only the courses they are teaching that term as long as there are assessments associated with that course. Once a course section is selected, the course-level average page appears (Figure 7). One may enter a course average or opt for "Enter Assessment Data By Candidate" to access the class list. Figure 8 displays the course enrollment list. Each candidate name, with ID, is a live link to the candidate's assessment page. After accessing the page by clicking on the candidate name one is able to enter assessment(s) for that candidate (Figure 9).

Currently the College of Education is the heaviest user of WADMS at the University. Approximately half of all WCE assessments are entered by course using WADMS and the other half are entered using WIS. In 2009-2010 nearly 12,000 assessment data elements were collected and entered into the system. The College of Business and Economics is using WADMS to store course averages and the Library systems are starting use of the system to store candidate-level assessment data in their courses.

The third component of the Woodring Information System is the Data Warehouse. It is a query system comprised of tables of data maintained by the University (i.e. transcript, course information and faculty) and of the data in tables maintained by the Woodring staff via the aforementioned screens.

Woodring Data Warehouse

The power of the Woodring Data Warehouse (See Figures 10 and 11) is in the ease with which users can combine Woodring data elements with data of the University into simple queries. The software (BI Query) allows the most elementary user to combine vast amounts of data into single spreadsheets. Advanced reports and queries are available on a menu. The Director routinely writes reports and queries that meet the operational and research needs of Woodring faculty and staff. All widely used products are placed on the menu for all to use.

The Woodring Reports menu (See Figures 12 and 13) is similarly organized by report topic and the Woodring Query menu (See Figures 14 and 15) is organized by query topic with sub-menus below.

Many queries and reports (See Figure 16) assist with the tracking of candidates through the curriculum either in cohorts or by the curriculum begin term or various other selection factors. Queries and reports allow the user to select a group of candidates based on Woodring criteria (i.e. all Special Education candidates who entered fall 2008 and later) and then view the candidates' academic history at WWU.

> **Candidates on Probation with GPAs** This report displays candidates currently placed on probation by in Secondary, Elementary or Special Education Departments. The query displays the candidates' GPAs from most recent to least recent terms, enabling faculty to see if the candidate has met the terms of their probationary status.
>
> **C- and Below Grades by Curriculum and Term --**This is a query that displays courses in which candidates have earned a C- grade and below for any group of candidates selected for any term. Because endorsement courses must be completed at a C or higher, this report assists departments and the Certification Office in advising candidates who have fallen below this requirement. This is an example of a report that combines the candidate's official University record (i.e. grades and transcript information) with Woodring data elements.
>
> **Clearance Status Report: Active Candidates** (Figure 16) This report is used to track candidate criminal history clearance through their tenure in the Woodring teacher education programs. The report is used to identify candidates whose clearances have or are going to expire before practicum, internship and ultimately, certification.

Several queries and reports identify candidates of user-selected groups who have *not yet* met certain teacher education requirements. As an example, training in Blood Borne Pathogens is a requirement for candidates working in schools in either practica or internships: The query **Blood Borne Requirement Missing** identifies those of a select group, i.e. Everett, cohort 11, who have not met this requirement. Other reports and queries assist in the advising of candidates. The report **Math Prerequisites for Active Candidates**, displays a candidate's status relative to the prerequisites for the teacher education math content and methods courses. Users may select the group of candidate they wish to view math prerequisites, i.e. Kitsap Elementary candidates who are at the post baccalaureate level.

Other Capabilities

The strength of the Data Warehouse is it contains a vast amount of complex information and displays it in a simplified form. As an example, the Data Warehouse contains the most recent WEST B score of any teacher education candidate. In most cases the recent scores are sufficient for typical use. However, the Woodring Director of Assessment and Evaluation has access to query the data in raw form and therefore, can develop more complex reports and analysis for research and assessment purposes.

Reports based on all times the WEST B was taken by candidates can be developed. While not available widely through the Data Warehouse, the quarterly Internship Survey data are stored alongside the Woodring tables, thus allowing the survey results to be disaggregated by any number of fields in the Woodring or WWU system.

Summary

Virtually all reports produced by the Director of Assessment and Evaluation come from one or more of the systems described herein. On a daily basis the system is used to answer questions posed by the Dean, faculty members, and College and University administrators. Ad hoc use of the system and the frequency of requests for data have ballooned as faculty and administrators have come to depend on data for decision making and administrative uses. The Data Reporting Calendar is published on the Assessment System website in the section entitled "Assessment System and Unit Evaluation." The routine reports are posted on the web and are accessible and used by members of the College and University community as well as the public. In this era of accountability and tight resources, WCE data systems have become central to the operation, planning and evaluation of College programs.

Figure 1: Woodring Screen Forms Login Page

Figure 2: Woodring Screen Forms Student Detail Screen

Figure 3: Woodring Screen Forms Curriculum Page

Figure 4: Woodring Screen Forms Assessment Page

Figure 5: Woodring Screen Forms Internship Supervisor Page

Figure 6: WADMS-- Select Faculty Course Section

Figure 7: WADMS-- Enter Course-Level Data

Figure 8: WADMS-- Select Student for Data Entry
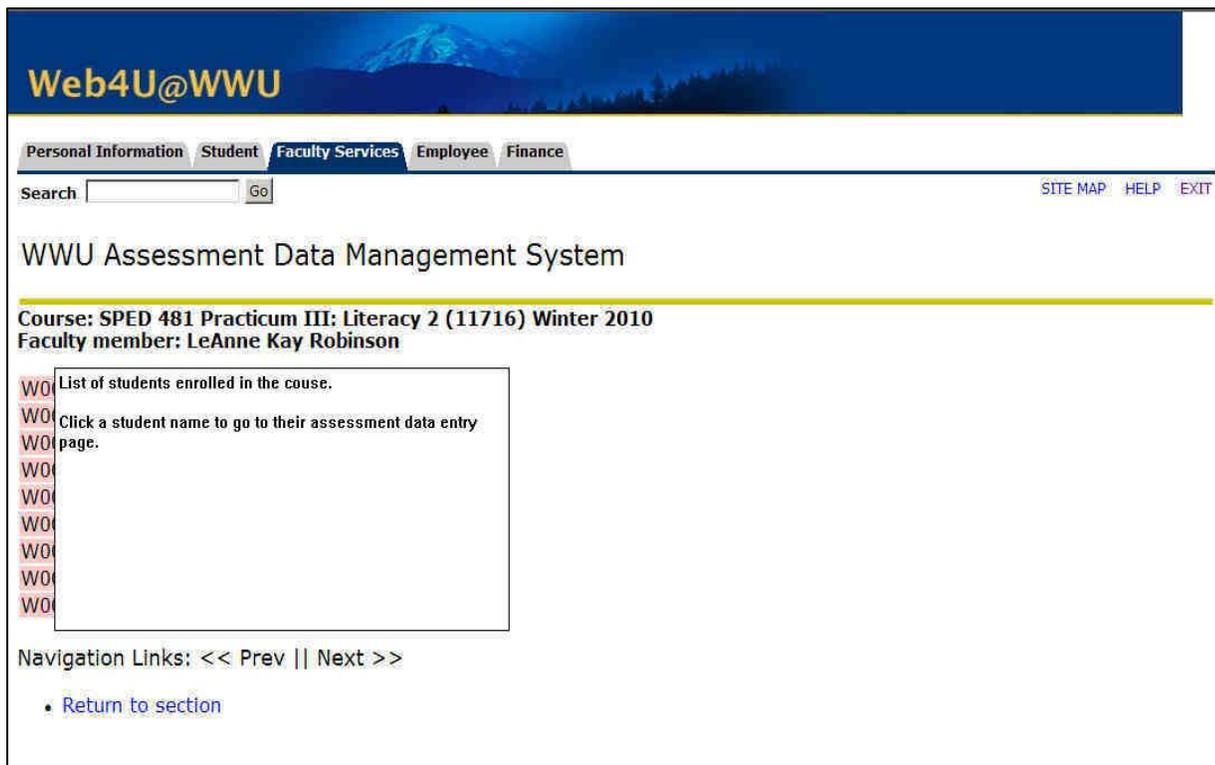
Figure 9:   WADMS-- Enter Student-Level Data

Figure 10: Data Warehouse Systems Selection Page
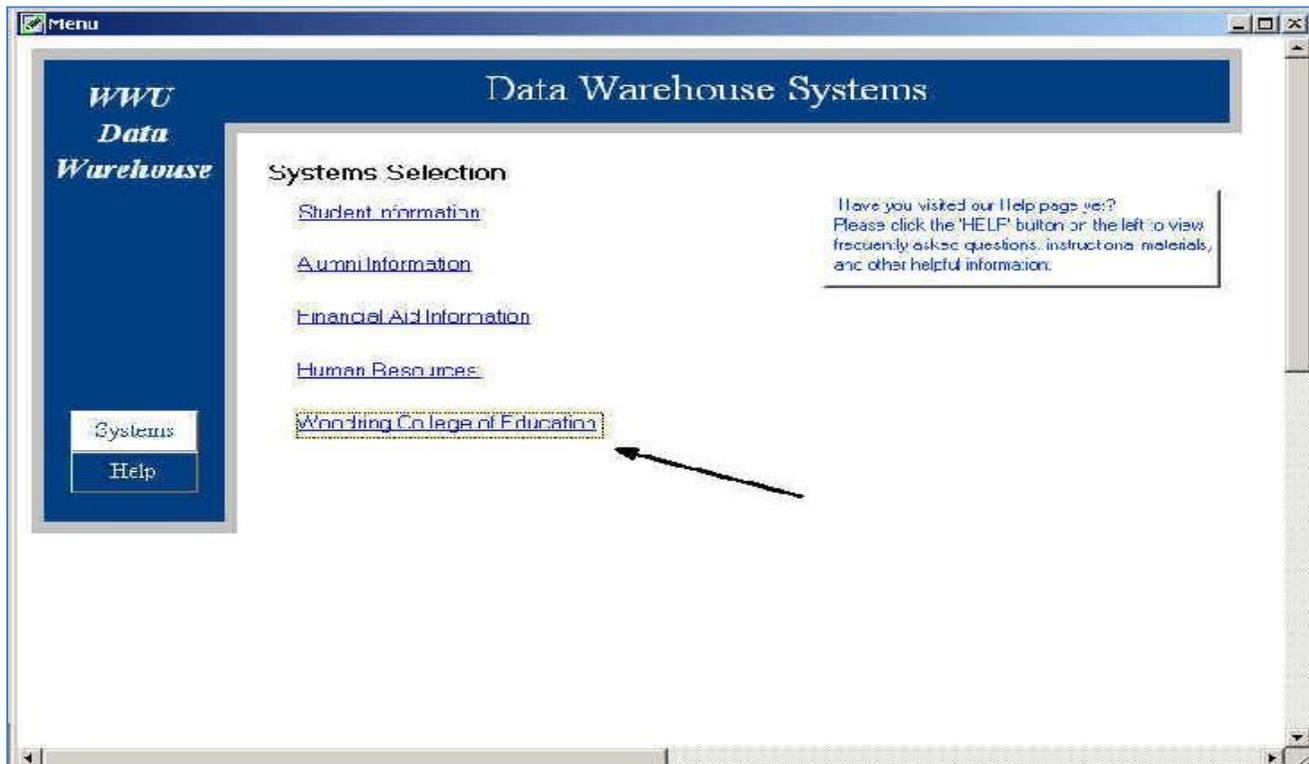
Figure 11: Data Warehouse Woodring Table Model
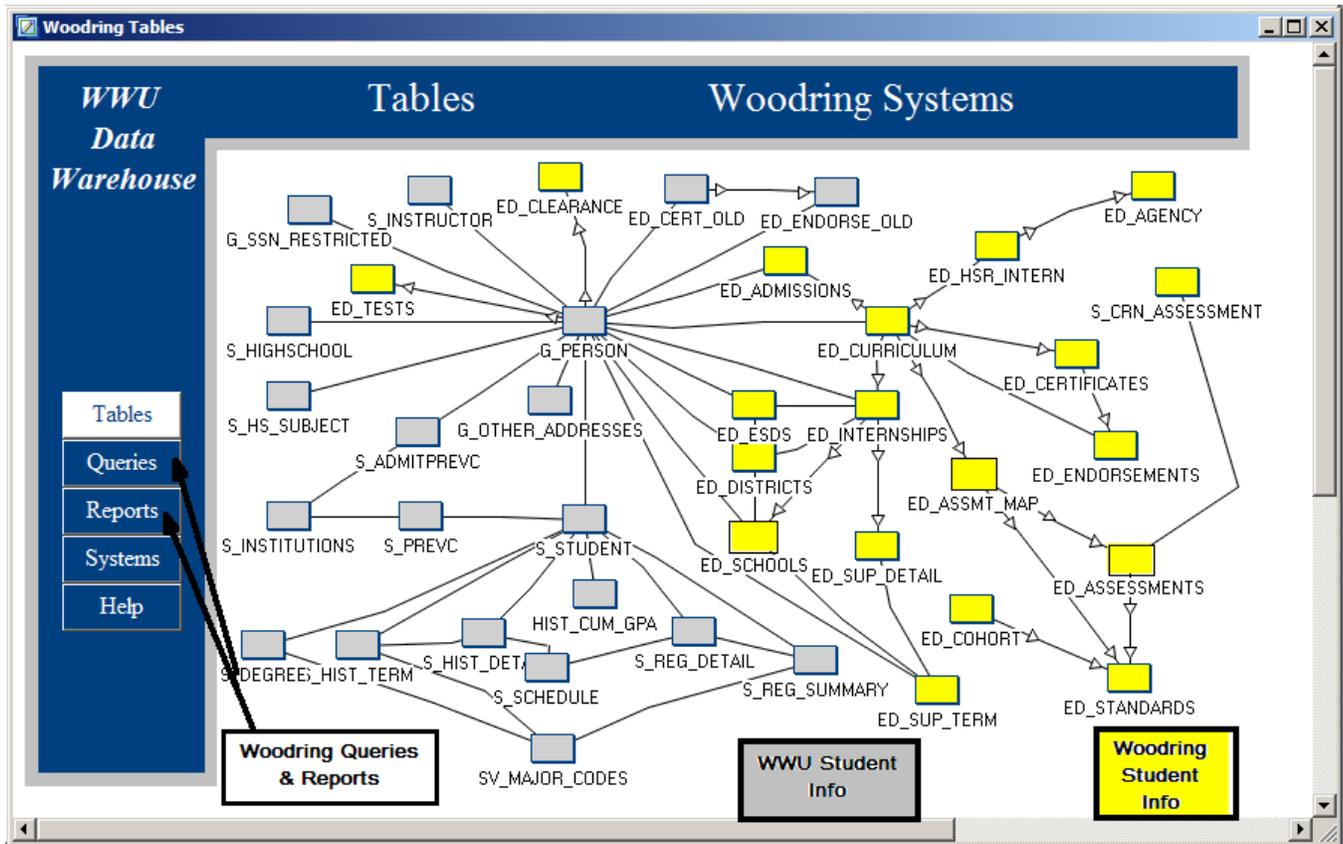
Figure 12: Woodring Reports Top Level Menu

Figure 13: Curriculum Reports Menu
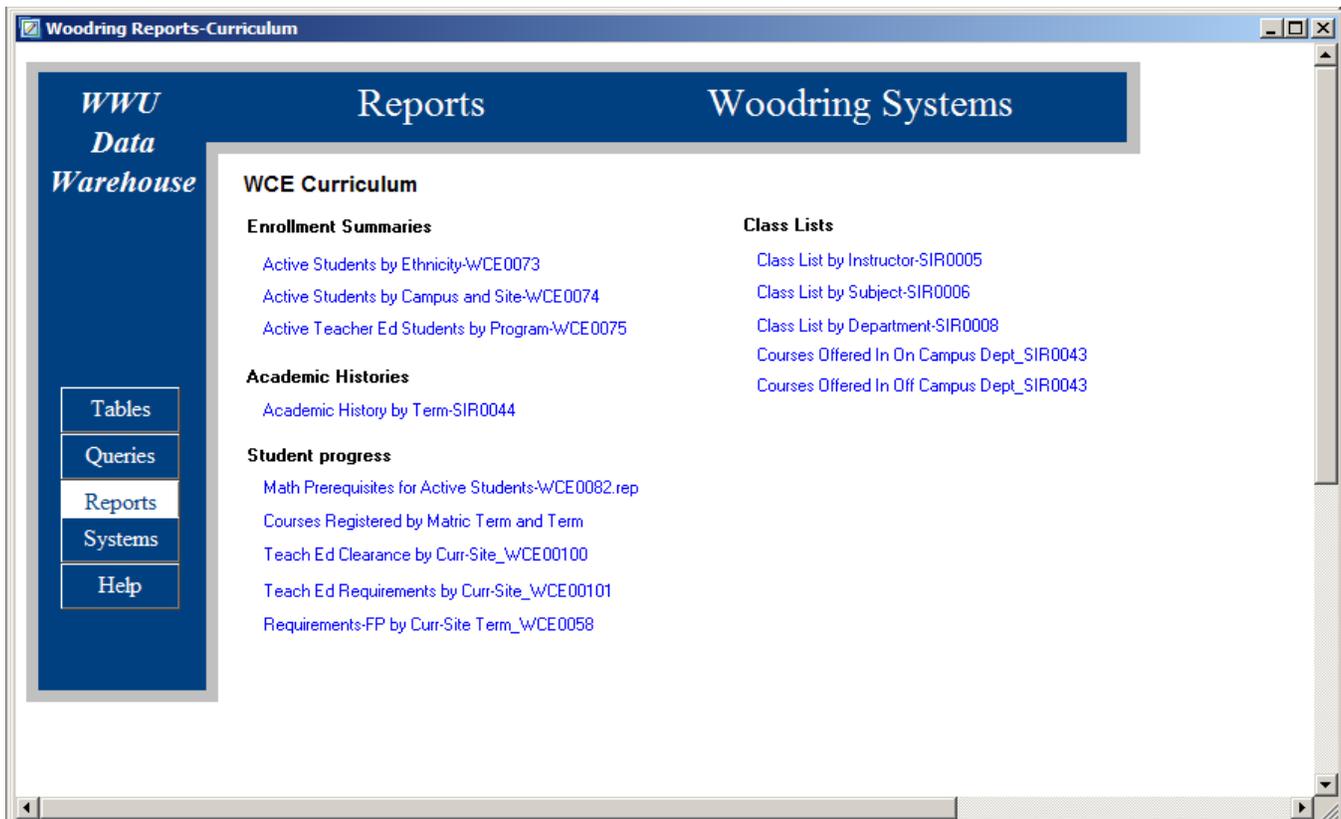
Figure 14: Woodring Queries Top Level Menu
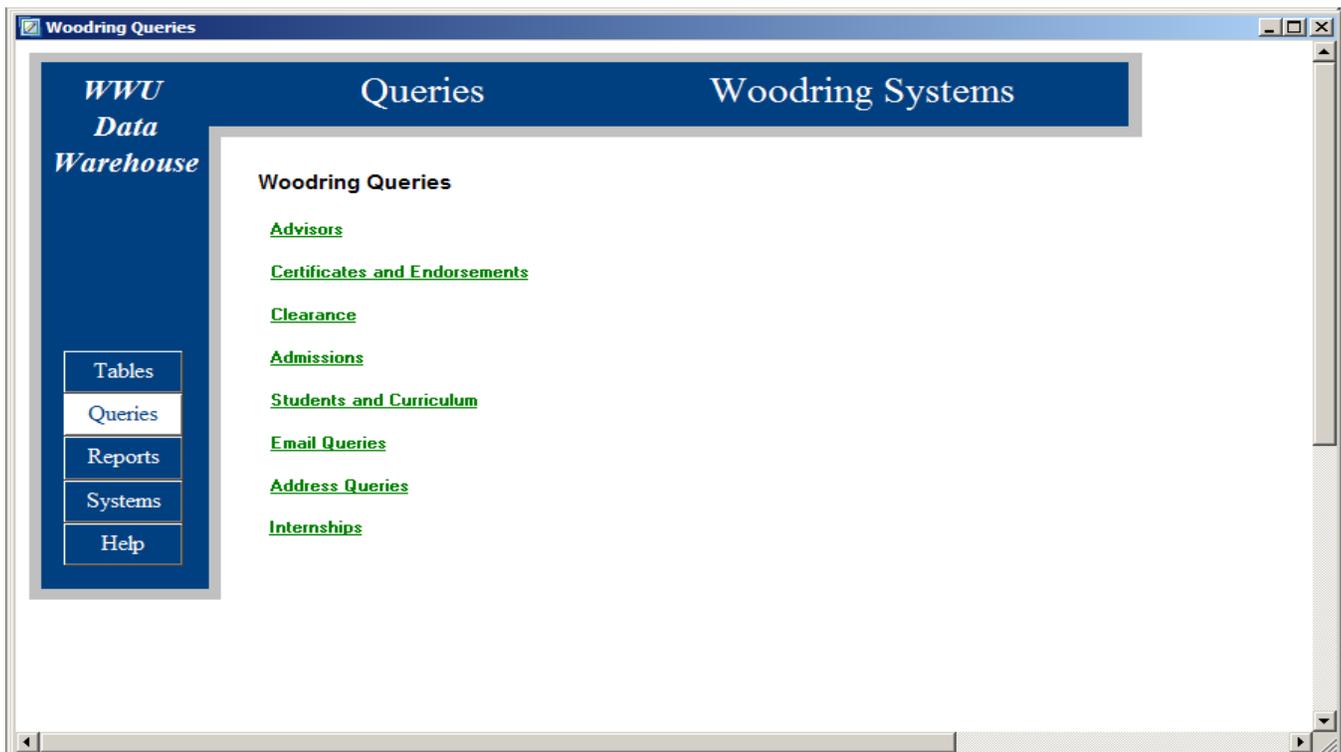
Figure 15: Curriculum Queries Menu
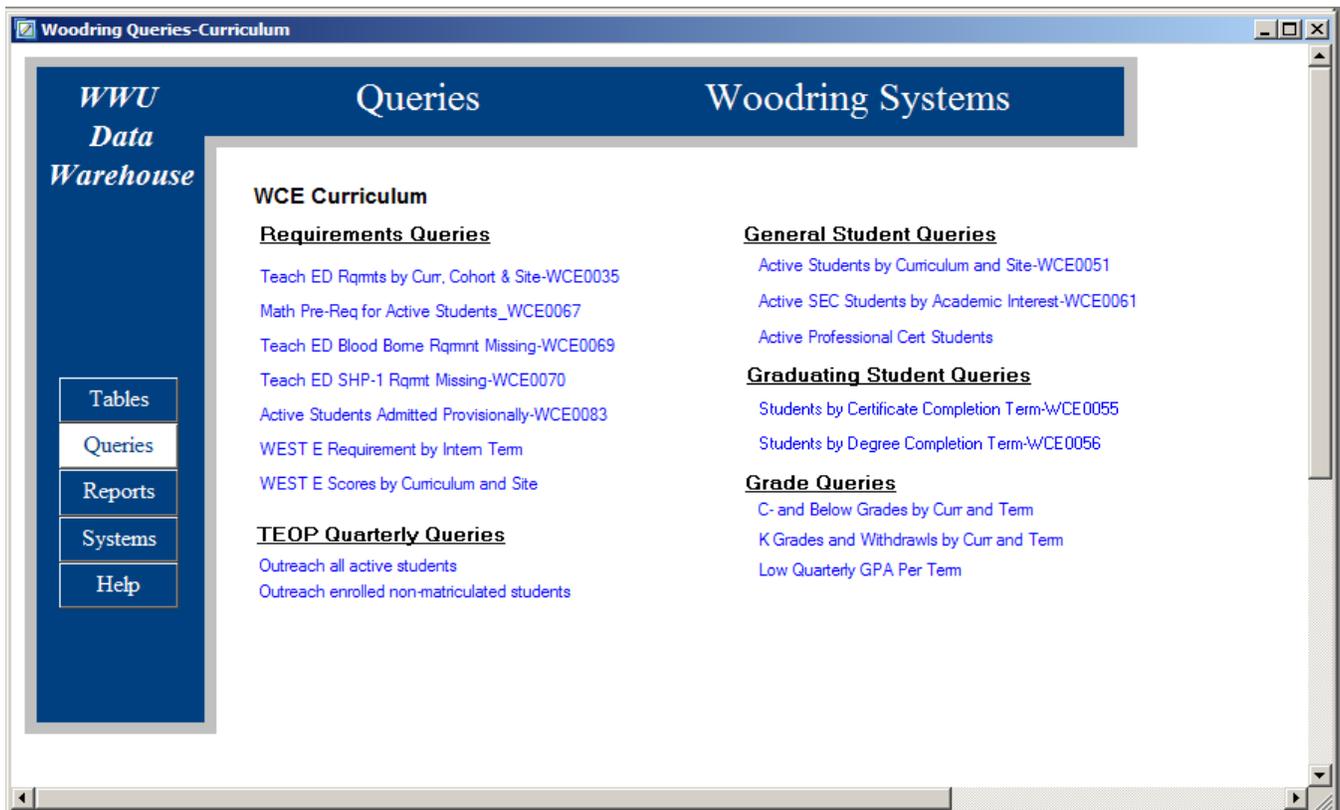
Figure 16: Report Examples: