

**ASSIST Transcript Analysis Tool  
Proposed Functional Requirements  
March 1998**

## **I. Introduction**

At their November 1997 meeting, the ASSIST Board of Directors asked the ASSIST Coordination Site (ACS) to define the high-level functional requirements for a new ASSIST transcript analysis tool. This document outlines these requirements and is being distributed broadly among campuses and the systemwide offices for comment.

These functional requirements will be posted on the ASSIST Web site for review and a Web-based form will be provided for campus, district, and systemwide office staff to provide feedback. After an appropriate review period, the ACS will collect all feedback and revise the functional requirements accordingly.

If you do not have access to the ASSIST Web site, please contact the ASSIST Director, Eric Taggart (714) 824-4385 [eric@assist.org](mailto:eric@assist.org) with any comments, questions, or recommendations regarding these functional requirements.

After campuses and the ASSIST Technical Advisory Committee have reviewed and commented on these functional requirements the ASSIST Board of Directors will provide a final review. Upon final review, the ASSIST Board will decide the next steps in developing the ASSIST Transcript Analysis Tool. Possible next steps include:

- surveying existing degree audit systems to see how they could meet the defined functional requirements,
- evaluating the feasibility of using candidate systems, and
- determining whether, and how, development of a system might proceed.

Additional resources will be required to achieve the capabilities described in this document. The ASSIST Board will most likely submit a corresponding Budget Change Proposal (BCP) to the California Legislature in order to request such funding. Given the nature of the BCP process, the ASSIST Board cannot guarantee any time lines for development and deployment of a new ASSIST Transcript Analysis Tool. As this process moves forward, the ASSIST Board will continue to provide status updates for campuses and other interested agencies.

## **II. Background**

Since ASSIST was started in 1985, computerized transcript evaluation (especially for transferable course work) has been an important capability desired by the California higher education community.

The Revelation-based ASSIST software included a comprehensive transcript analysis tool (the ASSIST Progress Check). However, due to a variety of factors, the Revelation-based ASSIST Progress Check is being phased-out and will not be converted into the new Internet-based ASSIST software.

The current ASSIST mission and vision statements, established by the ASSIST Board of Directors, continue to recognize the importance of transcript evaluation capabilities. One ASSIST Strategic Plan goal calls for establishing a transcript analysis capabilities within the general context of ASSIST. At their November 1997 meeting, the ASSIST Board of Directors agreed on the following basic capabilities for such a tool.

### ***Potential Evaluation Capabilities***

A new ASSIST transcript analysis tool will focus on evaluating student progress toward transfer-related academic goals, such as:

- Intersegmental General Education Transfer Curriculum (IGETC) Certification,
- CSU GE-Breadth Certification,
- UC and CSU Campus General Education for Transfer Students, and
- UC and CSU Campus Lower Division Major Preparation for Transfer Students.

Initial priority will be given to the implementation of IGETC and CSU GE-Breadth evaluations. UC and CSU campus GE and Major Preparation evaluations will be left for future phases. Accordingly, the functional requirements outlined in this document only address IGETC and CSU GE-Breadth evaluations.

Students, as well as college and university staff, will access this system directly using standard Web browsers connected to the Internet. Other systems such as UC Pathways, CSU Mentor and authorized campus-based information systems will also be able to integrate with this system via the Internet.

### ***User Authentication and Security***

This system will employ sufficient user authentication and security mechanisms to ensure privacy of student data. Other Web-based systems (UC Pathways and CSU Mentor) are developing user authentication and security mechanisms that should be directly applicable to ASSIST.

### ***Transcript Access***

Student transcript information will be essential to the success of this system. For the purpose of IGETC and CSU GE certification, transcript information from California Community Colleges will be the primary focus, although courses from UC and CSU campuses may apply for a limited number of students.

ASSIST will access student transcript data using whatever technologies are adopted by UC, CSU, and the Community Colleges. This may be some form of real-time Electronic Data Interchange (EDI) using the ANSI X12 (SPEEDE) standards. Whenever ASSIST needs transcript data for a student (to show transcripts or to perform an evaluation), it is assumed that ASSIST will use this process to retrieve the most current data.

In order to provide the most accurate evaluations, self-reported transcript information will not be supported. This means that only course work from colleges who support the above process will be able to be included in evaluations. While this will limit the utility of this system in the early stages, it is hoped that it will help to motivate additional colleges to implement required transcript exchange technologies.

### **III. Functional Requirements**

Given the general framework for a new ASSIST transcript analysis tool, as described above, the following are more detailed, high-level functional requirements for such a system.

This system would support two general types of access: one for human users and one for other, authorized computer systems. The first would be for students, faculty, and staff members to use a standard Web browser to identify the student, view transcripts, request evaluations, and view the results. The second would be for other computer systems, like UC Pathways and CSU Mentor, to request evaluations via the Internet through a specialized applications program interface (API) to be jointly designed by ASSIST and those other systems. Generic requests from unknown computer systems would not be supported in order to ensure the privacy of student information.

#### ***Student Users***

The following capabilities should be provided for student users.

##### **1. Request a Student User ID**

Before a student can use ASSIST to view their transcripts or request an evaluation, they must first be authenticated and provided with an ASSIST User ID and password. The authentication phase is important to ensure that the privacy of student records is maintained. The specific process that students will follow to request an ID and be authenticated has not yet been identified. It is assumed that processes to be employed by systems like UC Pathways and CSU Mentor will enforce a sufficient level of security to authenticate student users.

During this process, student users will be asked to identify which California Community Colleges they have attended and what was their local student ID number at that college. If required, ASSIST may also ask students for their

password or PIN used at each college. This information will be used whenever ASSIST has to retrieve transcript information for the student. Student users will also be asked to acknowledge that they authorize ASSIST to access their transcript information at these colleges.

## **2. Log in**

Once a student user has been authenticated and assigned a user ID and password, they will be able to use this ID and password to log into ASSIST. After a student has successfully logged into ASSIST, they will be presented with a menu of the various functions that they can choose (view transcript, request an evaluation, etc.). Student users will not be asked for their ID and password again unless they visit other Web sites or wait too long between screens.

## **3. Update List of California Community Colleges Attended**

After successfully logging into ASSIST, student users will be able to update the list of colleges they have attended. Students will be able to change their local student ID number and/or password/PIN, delete a college from their list, and add a college/ID/password to their list.

This function should keep track of and show student users who last changed this information and when.

## **4. View Transcripts**

After successfully logging into ASSIST, student users will be able to view their transcripts. ASSIST will retrieve their transcript information from whichever colleges the student has attended and display a combined report of all found transcript information. This report will also provide information regarding transcript information that could not be found for any of the student's institution/ID/password combinations. This could be because the college is not yet supporting the approved transcript process, because the student could not be authenticated by the institution, or because the institution is not releasing the student's information for some other reason.

## **5. Request an IGETC Evaluation**

After successfully logging into ASSIST, student users will be able to request an evaluation of IGETC Certification based on their transcript information. ASSIST will retrieve their transcript information from the colleges the student has attended and proceed to evaluate their courses against the official IGETC database stored in the ASSIST articulation repository. The evaluation will apply all official rules for determining IGETC certification as approved by the UC, CSU, and CCC systems.

A report of the evaluation results will be provided for the student.

## **6. Request a CSU GE-Breadth Evaluation**

After successfully logging into ASSIST, student users will be able to request an evaluation of CSU GE-Breadth Certification based on their transcript information. ASSIST will retrieve their transcript information from the colleges the student has attended and proceed to evaluate their courses against the official CSU GE-Breadth database stored in the ASSIST articulation repository. The evaluation will apply all official rules for determining CSU GE-Breadth certification as approved by the CSU and CCC systems. A report of the evaluation results will be provided for the student.

### ***Staff/Faculty Users***

The following capabilities should be provided for college and university staff and faculty users. It is assumed that after a staff or faculty member has been authenticated, they would be able to access transcript data for any student for the purpose of evaluating IGETC and CSU GE-Breadth certification.

#### **1. Request a Staff/Faculty User ID**

Before a staff or faculty member can use ASSIST to view student transcripts or request evaluations, they must first be authenticated and provided with an ASSIST User ID and password. The authentication phase is important to ensure that the privacy of student records is maintained. The specific process that staff/faculty will follow to request an ID and be authenticated has not yet been identified. However, it is assumed that processes to be employed by systems like UC Pathways and CSU Mentor will enforce a sufficient level of security to authenticate staff/faculty users.

#### **2. Log in**

Once a staff/faculty user has been authenticated and assigned a User ID and password, they will be able to use this ID and password to log into ASSIST. After a staff/faculty user has successfully logged into ASSIST, they will be presented with a menu of the various functions that they can choose (view transcripts, request evaluations, etc.). Staff/faculty users will not be asked for their ID and password again unless they visit other Web sites or wait too long between screens.

#### **3. Specify a Student**

After successfully logging into ASSIST, staff/faculty users will be able to specify a specific student with whose information they would like to work. Staff/faculty

users will most likely identify a student by first specifying an institution that the student attended, and then entering the student's local student ID number at that institution. Afterwards, other ASSIST functions during the session will assume that this is the student for whom information is to be used. Staff/faculty users will be able to change the specified student during their session.

#### **4. Update List of a Student's California Community Colleges Attended**

After successfully logging into ASSIST and specifying a student, staff/faculty users will be able to update the list of colleges that a student has attended. Staff/faculty users will be able to change a local student ID number and/or password/PIN, delete a college from the list, and add a college/ID/password to the list for a student.

This function should keep track of and show staff/faculty users who last changed this information and when they changed it.

#### **5. View a Student's Transcripts**

After successfully logging into ASSIST and specifying a student, staff/faculty users will be able to view the transcripts for a specified student. ASSIST will retrieve the transcript information from the colleges the student has attended and display a combined report of all found transcript information. This report will also provide information regarding transcript information that could not be found for any of the student's institution/ID/password combinations. This could be because the college is not yet supporting the approved transcript process, because the student could not be authenticated by the institution, or because the institution is not releasing the student's information for some other reason.

#### **6. Request an IGETC Evaluation for a Student**

After successfully logging into ASSIST and specifying a student, staff/faculty users will be able to request an evaluation of IGETC Certification based on the transcript information for a specified student. ASSIST will retrieve the transcript information from the colleges the student has attended and proceed to evaluate their courses against the official IGETC database stored in the ASSIST articulation repository. The evaluation will apply all official rules for determining IGETC certification as approved by the UC, CSU and CCC systems. A report of the evaluation results will be provided for the staff/faculty member.

#### **7. Request a CSU GE-Breadth Evaluation for a Student**

After successfully logging into ASSIST and specifying a student, staff/faculty users will be able to request an evaluation of CSU GE-Breadth Certification based

on the transcript information for a specified student. ASSIST will retrieve the transcript information from the colleges the student has attended and proceed to evaluate their courses against the official CSU GE-Breadth database stored in the ASSIST articulation repository. The evaluation will apply all official rules for determining CSU GE-Breadth certification as approved by the CSU and CCC systems. A report of the evaluation results will be provided for the staff/faculty member.

### ***Authorized Information Systems***

The following capabilities should be provided only for authorized information systems. Such systems could include UC Pathways, CSU Mentor, and individual degree audit systems implemented by CCC, CSU and UC campuses. It is assumed that any of these computer systems that have been authorized to communicate directly with ASSIST to request evaluations would employ sufficient mechanisms to authenticate users to ensure the privacy of any student information returned by ASSIST. Therefore, in order to provide a seamless transaction, ASSIST should not require any additional steps for user authentication. The institutions or agencies responsible for authorized computer systems would need to negotiate directly with ASSIST representatives to establish additional policies and practices required to ensure privacy and security. Requests from unauthorized sources should be handled without providing any student-specific information in the results.

#### **1. Automated Request for an IGETC Evaluation for a Student**

Authorized computer systems will be able to request an evaluation of IGETC Certification for a student. The request must include information to accurately specify the student (probably institution, local student ID number, and password/PIN) as well as information for other colleges the student has attended. ASSIST will retrieve the transcript information from the colleges the student has attended and proceed to evaluate their courses against the official IGETC database stored in the ASSIST articulation repository. The evaluation will apply all official rules for determining IGETC certification as approved by the UC, CSU and CCC systems. A file containing a report of the evaluation results will be returned to the requesting computer system.

#### **2. Automated Request for a CSU GE-Breadth Evaluation for a Student**

Authorized computer systems will be able to request an evaluation of CSU GE-Breadth Certification for a student. The request must include information to accurately specify the student (probably institution, local student ID number, and password/PIN) as well as information for other colleges the student has attended. ASSIST will retrieve the transcript information from whichever colleges the student has attended and proceed to evaluate their courses against the official CSU

GE-Breadth database stored in the ASSIST articulation repository. The evaluation will apply all official rules for determining CSU GE-Breadth certification as approved by the CSU and CCC systems. A file containing a report of the evaluation results will be returned to the requesting computer system.

### *Administrative Users*

#### **1. Activity Reports**

Authorized administrative users (most likely ACS staff) will be able to request reports that detail activity on this system. At a minimum, these reports will include information that identify all system requests and activities for a specified time period along with the source and completion status of each request.

### *Report Characteristics*

In response to the above requests for information, ASSIST will provide reports that either contain the information requested, or contain further information explaining why the desired information could not be provided. All reports will be viewable in a standard Web browser and will be available in a format suitable for printing on the user's local (or networked) printer. Reports for requests which originated from an authorized information system may use a different format to meet the more specific needs of those systems. Any alternative formats such as these will be established jointly by representatives from ASSIST and the agencies responsible for those other systems.

#### **1. Transcript Reports**

Transcript reports will include information for only one student at a time. For each institution the student has attended, the following information will be included:

- Name of the institution
- Student name at the institution
- Student ID number at the institution
- Terms when the student attended the institution (ordered chronologically)
- Course names in which the student enrolled at the institution (divided by term)
- Course title for each course
- Number of units attempted for each course
- Number of units received for each course
- Grade received for each course (including incomplete, in progress, etc.)

#### **2. IGETC Certification Evaluation Reports**

IGETC certification evaluation reports will include detailed information about

how the specified student has satisfied each requirement of the IGETC. IGETC reports will include the student's ID number(s) and name (if available), date the report was produced, appropriate headings for each page with page numbers, and the following information for every IGETC requirement:

- Brief title identifying the requirement and corresponding IGETC area codes
- Description of the requirement
- Which course or courses were applied to the requirement (including course names, titles, units, and grades)
- Whether the requirement has been satisfied, partially satisfied, or not satisfied
- If the requirement is not fully satisfied, optional information (if requested) identifying how the requirement can be satisfied using courses at the college the student is currently attending (or has most recently attended)

At the end of the report, summary information will be provided which includes:

- A list of courses from the student's transcripts that were not used in the evaluation
- Total number of units the student has taken
- Total number of transferable units the student has taken
- Total number of transferable units the student has taken that were applied to this evaluation
- Total GPA of all courses the student has taken
- Total GPA of transferable courses the student has taken
- Total GPA of transferable courses the student has taken that were applied to this evaluation
- Additional textual information regarding IGETC Certification to aid the student

### **3. CSU GE-Breadth Certification Evaluation Reports**

CSU GE-Breadth certification evaluation reports will include detailed information about how the specified student has satisfied each requirement of the CSU GE. CSU GE reports will include the student's ID number(s) and name (if available), date the report was produced, appropriate headings for each page with page numbers, and the following information for every CSU GE requirement:

- Brief title identifying the requirement and corresponding CSU GE area codes
- Description of the requirement
- Which course or courses were applied to the requirement (including course names, titles, units, and grades)
- Whether the requirement has been satisfied, partially satisfied, or not satisfied
- If the requirement is not fully satisfied, optional information (if requested) identifying how the requirement can be satisfied using courses at the college the student is currently attending (or has most recently attended)

At the end of the report, summary information will be provided which includes:

- A list of courses from the students transcripts that were not used in the evaluation
- Total number of units the student has taken
- Total number of transferable units the student has taken
- Total number of transferable units the student has taken that were applied to this evaluation
- Total GPA of all courses the student has taken
- Total GPA of transferable courses the student has taken
- Total GPA of transferable courses the student has taken that were applied to this evaluation
- Additional textual information regarding CSU GE-Breadth Certification to aid the student

#### **IV. Known Issues**

This section summarizes current known issues related to the successful implementation of a transcript analysis tool as described above. As more detailed implementation plans are developed, additional related issues may arise that will need to be addressed to ensure a successful system.

##### **1. Transcript Access and Student Authentication**

Currently, there is no mechanism in place at all of the California Community Colleges to support student authentication and transcript access as will be required by this system. There are also no firm plans to establish such mechanisms in the near future.

A limited number of colleges are able to send transcript data electronically using the ANSI X12.130 (SPEEDE) standard. However, further research and development work will most likely be needed in order to support the full range of real-time authentication and exchange that will be required by the ASSIST Transcript Analysis Tool.

The three systems of California public higher education will continue to pursue a common mechanism for exchanging student transcript information. Until such a mechanism is in place, an ASSIST Transcript Analysis Tool will be available to only those students who have attended colleges where transcript information can be accessed and students can be authenticated.

##### **2. Faculty/Staff Authentication**

Currently, there is no mechanism in place to authenticate staff and faculty users to ensure the privacy of student data. Until an automated system can be developed and

implemented, authenticating staff and faculty users may have to be done by people. Perhaps a central organization, like the ACS, can work with known campus representatives to assign user IDs and passwords to staff and faculty who would like to use the ASSIST Transcript Analysis Tool.

### **3. Historical Curriculum Data and Imprecise Transferable Unit & GPA Calculations**

The official IGETC database in the ASSIST articulation repository includes historical information on curricular changes in IGETC applicable courses since the inception of IGETC in 1991. The official CSU GE-Breadth database in the ASSIST articulation repository includes historical information on curricular changes in CSU GE applicable courses only since about 1995. Earlier curriculum history on CSU GE applicable courses is inconsistent. Even with this limitation, ASSIST should be able to provide enough information to evaluate IGETC and CSU GE-Breadth certification for most students. Inaccuracies may result for students who have taken CSU GE course work prior to Fall 95.

Additionally, the ASSIST repository does not currently contain complete and historical curriculum data for all California Community Colleges. This means that the ASSIST Transcript Analysis Tool will not always be able to accurately determine the general transferability of courses in a student's transcript that are not IGETC or CSU GE applicable. While this should not affect the evaluation of IGETC or CSU GE certification, overall transferable unit and GPA calculations may not be precise since complete curriculum data may not exist for non-IGETC and non-CSU GE applicable, but transferable, courses.