

**Requirements and Specification, ESOF 328, Spring 2021**  
**Final, March 22**

Name \_\_\_\_\_

This exam is to be completed individually without the use of the text, notes, the Internet, or any other items.

**Multiple Choice (20 pts.)**

1. Select the best category for the information: System X must use an MS SQLServer database. (4 pts.)
  - a. Business rule
  - b. User requirement
  - c. Functional requirement
  - d. Non-functional requirement which is not also a quality attribute
  - e. Quality attribute
  
2. Administrators, graduates and seniors can create and edit the profiles in the system. (4 pts.)
  - a. Business rule
  - b. User requirement
  - c. Functional requirement
  - d. Non-functional requirement which is not also a quality attribute
  - e. Quality attribute
  
3. Tech Connect shall only be accessible to authenticated users within Tech Connect. (4 pts.)
  - a. User requirement
  - b. Functional requirement
  - c. Non-functional requirement which is not also a quality attribute
  - d. Quality attribute
  - e. Design constraint
  
4. Select the best description for when use case A “extends” use case B. (4 pts.)
  - a. When use case A may or may not include use case B.
  - b. When use case B may or may not include use case A.
  - c. When use case A always includes use case B.
  - d. When use case B always includes use case A.
  - e. None of the above.
  
5. Which of the following is least likely to be a skill needed by the business analyst? (4 pts.)
  - a. Listening skills
  - b. Facilitation skills
  - c. Analytical skills
  - d. Modeling skills
  - e. Project management skills

### Short Answer (30 pts.)

6. List the 4 major requirements management activities. (5 pts.)
7. Imagine that you have become a business analyst for a software development company. An analyst recently hired on the project wonders why both use cases and functional requirements are being created. He claims it would be more efficient creating one or the other. Give arguments for creating both use cases and functional requirements. (5 pts.)

8. What is the most important reason for prioritizing requirements? (5 pts.)

9. What are the most issues to be considered when prioritizing requirements? (5 pts.)

10. List the 3 dimensions of timing requirements.

(5 pts.)

11. List 5 issues which need to be explored regarding the timing and scheduling requirements for a system's real-time tasks.

(5 pts.)

## Essay/Problem Solving (50 pts.)

At the final Tech Connect meeting, the clients asked for “pin contacts” functionality. The statement was made “Once I have searched for someone, I don’t want have to have to start from square one when I want to find them later.”

12. The final SRS “User search” use case is shown below. Following that is a template for a new use case. Capture the pin contacts functionality by modifying the “User search” use case, or creating an entirely new use case. Capture the functionality in a way that that clients are likely to approve of. Feel free to make improvements to the “User search” use case as well. (20 pts.)

### User search

Created By:	John Nelson	Last Updated By:	Andrew Moreno
Date Created:	March 17, 2021	Date Last Updated:	April 5, 2021
Roles:	Alumni, Graduating Students		
Description:	User searches for other users		
Preconditions:	User is authenticated.		
Postconditions:	Search results are displayed to the user.		
Normal Flow:	<p><b>1.0 Search for a profile</b></p> <ol style="list-style-type: none"> <li>1. User indicates desire to search for a profile.</li> <li>2. A search interface appears for user to enter a keyword or use search filters.               <ol style="list-style-type: none"> <li>i. User chooses to search with a keyword and enters a keyword.</li> <li>ii. User chooses to search with filter options.</li> <li>iii. User chooses one or more filter options of choice from listed filters.                   <ol style="list-style-type: none"> <li>a. Name</li> <li>b. Major</li> <li>c. Graduation Year</li> <li>d. City</li> <li>e. Company</li> <li>f. State</li> <li>g. Country</li> </ol> </li> </ol> </li> <li>3. User submits entered keyword or choice of filters.</li> <li>4. If success a list of search results with profile information and picture appears.</li> <li>5. User navigates on desired profile from the search result list and opens profile details.</li> </ol> <p>User may add the profile to their list.</p>		
Alternative Flows:	<p><b>1.0 User Aborts Search</b> (branch at step 2)</p> <ol style="list-style-type: none"> <li>1. User indicates a desire to abort the profile search.</li> <li>2. System terminates the request.</li> </ol>		

Exceptions:	<p><b>1.0.E.1 Internal error (branch after step 2)</b></p> <p>1. The system is not able to connect to the database or some other internal error.</p> <p><b>1.1. E.1 Search returns no results (branch after step 4)</b></p> <p>1. User submits a search input</p> <p>2. No values are returned, system displays a no result message, and user is returned to the search interface.</p>
Includes/Extends:	None
Priority:	High
Frequency of Use:	Frequent
Business Rules:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case Name:			
Created By:	You	Last Updated By:	You
Date Created:	April 22, 2021	Date Last Updated:	April 22, 2021

Actors:	
Description:	
Trigger:	
Preconditions:	
Postconditions:	
Normal Flow:	

Alternative Flows:	
Exceptions:	

Includes:	
Priority:	
Frequency of Use:	
Business Rules:	
Special Requirements:	
Assumptions:	
Notes and Issues:	

13. Create a functional requirement / functional requirements to support both the search and pin user functionality specified in the previous question. (15 pts.)

14. Using the template provided, give the portion of a data dictionary for the *Tech Connect* data required in the search and “pin contact” functionality that you described in the previous two questions. While this data may include references to data in the *GIT Webservice*, assume that this data would not be stored in the *GIT Webservice*.  
 (15 pts.)

Data Element	Description	Composition or Data type	Length	Values